

SEQUENCE LISTING

<110> LIPSCOMBE, Diane
BELL, Thomas
THALER, Christopher
CASTIGLIONI, Andrew

<120> NOCICEPTIVE NEURON-SPECIFIC CALCIUM CHANNEL ISOFORM AND USES
THEREOF

<130> B0877.70026US00

<150> US 60/443,474

<151> 2003-01-29

<160> 47

<170> PatentIn version 3.2

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Lys Asp Met Tyr Ser Leu Leu Arg Cys Ile Ala Pro Pro Val Gly Leu
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tct Ser 1660	tgc Cys	ctg Leu	ggc Gly	aac Asn	cgg Arg 1665	gcc Ala	tgc Cys	gac Asp	cca Pro	cat His 1670	gcc Ala	aac Asn	gcc Ala	agc Ser	5113
gaa Glu 1675	tgc Cys	ggg Gly	agc Ser	gac Asp	ttt Phe 1680	gcc Ala	tat Tyr	ttt Phe	tat Tyr	ttt Phe 1685	gtc Val	tcc Ser	ttc Phe	atc Ile	5158
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2020 2025 2030					

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<400> 28

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Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
35 40 45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
50 55 60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65 70 75 80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
85 90 95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
100 105 110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
115 120 125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
130 135 140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145 150 155 160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
165 170 175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
180 185 190

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Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225 230 235 240

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Pro Ala Arg Leu Cys Asp Ser Asp Thr Glu Cys Arg Glu Tyr Trp Pro
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Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
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Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
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Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe		
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Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys		
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Thr Glu Thr Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser His		
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Glu Gly Asp Lys Glu Thr Arg Asn His Gln Pro Lys Glu Pro Arg
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Pro	Arg	Arg	His	His	Arg	His	Arg	Asp	Arg	Asp	Lys	Thr	Ser	Ala	Ser		
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Asp	Ser	Phe	Arg	Asn	Asn	Ala	Leu	Lys	Tyr	Met	Asp	Tyr	Ile	Phe	
	1175					1180					1185				
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Thr	Gly	Val	Phe	Thr	Phe	Glu	Met	Val	Ile	Lys	Met	Ile	Asp	Leu	
	1190					1195					1200				
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Gly	Leu	Leu	Leu	His	Pro	Gly	Ala	Tyr	Phe	Arg	Asp	Leu	Trp	Asn	
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att	ctg	gac	ttc	att	gtt	gtc	agt	gga	gcc	ctg	gtg	gca	ttt	gca	3699
Ile	Leu	Asp	Phe	Ile	Val	Val	Ser	Gly	Ala	Leu	Val	Ala	Phe	Ala	
	1220					1225					1230				
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Phe	Ser	Ser	Phe	Met	Gly	Gly	Ser	Lys	Gly	Lys	Asp	Ile	Asn	Thr	
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Ile	Lys	Ser	Leu	Arg	Val	Leu	Arg	Val	Leu	Arg	Pro	Leu	Lys	Thr	
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Ile	Lys	Arg	Leu	Pro	Lys	Leu	Lys	Ala	Val	Phe	Asp	Cys	Val	Val	
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Asn	Ser	Leu	Lys	Asn	Val	Leu	Asn	Ile	Leu	Ile	Val	Tyr	Met	Leu	
	1280					1285					1290				
ttc	atg	ttt	ata	ttt	gcc	gtc	atc	gcc	gtc	caa	ctc	ttc	aaa	ggg	3924
Phe	Met	Phe	Ile	Phe	Ala	Val	Ile	Ala	Val	Gln	Leu	Phe	Lys	Gly	
	1295					1300					1305				
aag	ttc	ttt	tac	tgc	act	gat	gag	tcc	aag	gag	ctg	gag	cgg	gac	3969
Lys	Phe	Phe	Tyr	Cys	Thr	Asp	Glu	Ser	Lys	Glu	Leu	Glu	Arg	Asp	
	1310					1315					1320				
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Cys	Arg	Gly	Gln	Tyr	Leu	Asp	Tyr	Glu	Lys	Glu	Glu	Val	Glu	Ala	
	1325					1330					1335				
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Gln	Pro	Arg	Gln	Trp	Lys	Lys	Tyr	Asp	Phe	His	Tyr	Asp	Asn	Val	
	1340					1345					1350				

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tgg ccc atg gtg ctg aaa cac tct gtg gac gcc acc tat gag gag Trp Pro Met Val Leu Lys His Ser Val Asp Ala Thr Tyr Glu Glu 1370 1375 1380	4149
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gtg gtc tac ttt gtg gtc ttc cct ttt ttc ttt gtc aac atc ttt Val Val Tyr Phe Val Val Phe Pro Phe Phe Phe Val Asn Ile Phe 1400 1405 1410	4239
gtg gcc ttg atc atc atc acc ttc cag gag cag ggg gac aag gtg Val Ala Leu Ile Ile Ile Thr Phe Gln Glu Gln Gly Asp Lys Val 1415 1420 1425	4284
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att act gat att tta gta acg gag att gcg aac aac ttc atc aac Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Asn Asn Phe Ile Asn 1550 1555 1560	4689
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Cys	Arg	Gln	Gly	Tyr	Thr	Ile	Arg	Ile	Leu	Leu	Trp	Thr	Phe	Val		
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Gln	Ser	Phe	Lys	Ala	Leu	Pro	Tyr	Val	Cys	Leu	Leu	Ile	Ala	Met		
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Leu	Phe	Phe	Ile	Tyr	Ala	Ile	Ile	Gly	Met	Gln	Val	Phe	Gly	Asn		
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Ile	Ala	Leu	Asp	Asp	Gly	Thr	Ser	Ile	Asn	Arg	His	Asn	Asn	Phe		
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Arg	Thr	Phe	Leu	Gln	Ala	Leu	Met	Leu	Leu	Phe	Arg	Ser	Ala	Thr		
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Gly	Glu	Ala	Trp	His	Glu	Ile	Met	Leu	Ser	Cys	Leu	Gly	Asn	Arg		
1655						1660					1665					
gcc	tgc	gac	cca	cat	gcc	aac	gcc	agc	gaa	tgc	ggg	agc	gac	ttt	5049	
Ala	Cys	Asp	Pro	His	Ala	Asn	Ala	Ser	Glu	Cys	Gly	Ser	Asp	Phe		
1670						1675					1680					
gcc	tat	ttt	tat	ttt	gtc	tcc	ttc	atc	ttc	ctc	tgt	tcc	ttt	ctg	5094	
Ala	Tyr	Phe	Tyr	Phe	Val	Ser	Phe	Ile	Phe	Leu	Cys	Ser	Phe	Leu		
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Phe	Ile	Arg	Val	Trp	Ala	Glu	Tyr	Asp	Pro	Ala	Ala	Cys	Gly	Arg		
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gag atc aag ctt gcc cca gcg ggg aca aaa cag cac caa tgt gat Glu Ile Lys Leu Ala Pro Ala Gly Thr Lys Gln His Gln Cys Asp 1805 1810 1815			5454
gct gag ctg agg aag gag atc tct tct gtg tgg gct aat ctg ccc Ala Glu Leu Arg Lys Glu Ile Ser Ser Val Trp Ala Asn Leu Pro 1820 1825 1830			5499
cag aag act ctg gac tta ctg gtg cca ccc cac aaa cct gac gag Gln Lys Thr Leu Asp Leu Leu Val Pro Pro His Lys Pro Asp Glu 1835 1840 1845			5544
atg aca gtg ggg aag gtc tat gcg gct ctc atg ata ttt gac ttc Met Thr Val Gly Lys Val Tyr Ala Ala Leu Met Ile Phe Asp Phe 1850 1855 1860			5589
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gcg gcc tct atg cca cgc ctg	gcg gca gaa aca cag	ccg gcc cct	6039
Ala Ala Ser Met Pro Arg Leu	Ala Ala Glu Thr Gln	Pro Ala Pro	
2000	2005	2010	
aat gcc agc ccc atg aag cgc	tcc atc tcc aca ctg	gct cca cgc	6084
Asn Ala Ser Pro Met Lys Arg	Ser Ile Ser Thr Leu	Ala Pro Arg	
2015	2020	2025	
ccg cat ggg act cag ctt tgc	aac aca gtc ctg gac	cgg cca cct	6129
Pro His Gly Thr Gln Leu Cys	Asn Thr Val Leu Asp	Arg Pro Pro	
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Pro Ser Gln Val Ser His His	His His His Arg Cys	His Arg Arg	
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Arg Asp Lys Lys Gln Arg Ser	Leu Glu Lys Gly Pro	Ser Leu Ser	
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Val Asp Thr Glu Gly Ala Pro	Ser Thr Ala Ala Gly	Ser Gly Leu	
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Pro His Gly Glu Gly Ser Thr	Gly Cys Arg Arg Glu	Arg Lys Gln	
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Glu Arg Gly Arg Ser Gln Glu	Arg Arg Gln Pro Ser	Ser Ser Ser	
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Ser Glu Lys Gln Arg Phe Tyr	Ser Cys Asp Arg Phe	Gly Ser Arg	
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Glu Pro Pro Gln Pro Lys Pro	Ser Leu Ser Ser His	Pro Ile Ser	
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Pro Thr Ala Ala Leu Glu Pro	Gly Pro His Pro Gln	Gly Ser Gly	
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Ser Val Asn Gly Ser Pro Leu	Met Ser Thr Ser Gly	Ala Ser Thr	
2165	2170	2175	
ccg ggc cga ggt ggg cgg agg	cag ctc ccc cag act	ccc ctg acc	6579
Pro Gly Arg Gly Gly Arg Arg	Gln Leu Pro Gln Thr	Pro Leu Thr	
2180	2185	2190	
cca cgc ccc agc atc acc tac	aag acg gcc aat tcc	tcg cct gtc	6624
Pro Arg Pro Ser Ile Thr Tyr	Lys Thr Ala Asn Ser	Ser Pro Val	
2195	2200	2205	

cac ttt gct gag ggt cag agt ggc ctt cca gcc ttc tcc cct ggc His Phe Ala Glu Gly Gln Ser Gly Leu Pro Ala Phe Ser Pro Gly 2210 2215 2220	6669
cgt ctc agc cgc ggc ctt tct gaa cac aat gcc ctg ctc cag aaa Arg Leu Ser Arg Gly Leu Ser Glu His Asn Ala Leu Leu Gln Lys 2225 2230 2235	6714
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gac cct tac cta ggg cag cgt ctg gac agt gag gcc tct gcc cac Asp Pro Tyr Leu Gly Gln Arg Leu Asp Ser Glu Ala Ser Ala His 2255 2260 2265	6804
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act ttg gga ctc agc acc ggc gtc cgg gcg cgg cac agc tac cac Thr Leu Gly Leu Ser Thr Gly Val Arg Ala Arg His Ser Tyr His 2315 2320 2325	6984
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 <212> PRT
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<400> 30

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Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
35 40 45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val

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Lys	Gln	Asn	Cys	Phe	Thr	Val	Asn	Arg	Ser	Leu	Phe	Val	Phe	Ser	Glu	
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Asp	Asn	Val	Val	Arg	Lys	Tyr	Ala	Lys	Arg	Ile	Thr	Glu	Trp	Pro	Pro	
				85					90					95		
Phe	Glu	Tyr	Met	Ile	Leu	Ala	Thr	Ile	Ile	Ala	Asn	Cys	Ile	Val	Leu	
			100					105					110			
Ala	Leu	Glu	Gln	His	Leu	Pro	Asp	Gly	Asp	Lys	Thr	Pro	Met	Ser	Glu	
		115					120					125				
Arg	Leu	Asp	Asp	Thr	Glu	Pro	Tyr	Phe	Ile	Gly	Ile	Phe	Cys	Phe	Glu	
	130					135					140					
Ala	Gly	Ile	Lys	Ile	Ile	Ala	Leu	Gly	Phe	Val	Phe	His	Lys	Gly	Ser	
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Tyr	Leu	Arg	Asn	Gly	Trp	Asn	Val	Met	Asp	Phe	Val	Val	Val	Leu	Thr	
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Glu	Ile	Leu	Ala	Thr	Ala	Gly	Thr	Asp	Phe	Asp	Leu	Arg	Thr	Leu	Arg	
		180						185					190			
Ala	Val	Arg	Val	Leu	Arg	Pro	Leu	Lys	Leu	Val	Ser	Gly	Ile	Pro	Ser	
		195					200					205				
Leu	Gln	Val	Val	Leu	Lys	Ser	Ile	Met	Lys	Ala	Met	Val	Pro	Leu	Leu	
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Gln	Ile	Gly	Leu	Leu	Leu	Phe	Phe	Ala	Ile	Leu	Met	Phe	Ala	Ile	Ile	
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Gly	Leu	Glu	Phe	Tyr	Met	Gly	Lys	Phe	His	Lys	Ala	Cys	Phe	Pro	Asn	
			245						250					255		
Ser	Thr	Asp	Ala	Glu	Pro	Val	Gly	Asp	Phe	Pro	Cys	Gly	Lys	Glu	Ala	
			260					265					270			
Pro	Ala	Arg	Leu	Cys	Asp	Ser	Asp	Thr	Glu	Cys	Arg	Glu	Tyr	Trp	Pro	
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Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
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Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
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Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
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Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
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Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
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Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
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Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
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Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Ala Val
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Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala
420 425 430

Glu Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Ala Gly Ser Pro
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Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
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Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Leu Ile Arg Arg Met Val
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Lys Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn
485 490 495

Thr Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr
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Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr
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Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
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Glu Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser
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Trp Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys
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Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
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Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr
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Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His
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Gly Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe
675 680 685

Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
690 695 700

Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
705 710 715 720

Lys Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu
725 730 735

Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn
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Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val
755 760 765

Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser
770 775 780

Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr
785 790 795 800

Ala Ser Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg
805 810 815

Pro Leu Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Ala Gly
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Asn Lys Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Gly Ala Asp Pro
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Pro Arg Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Ser
850 855 860

Thr Pro Ala Gly Gly Glu Gln Asp Arg Thr Asp Cys Pro Lys Ala Glu
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Ser Thr Glu Thr Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser
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His Ser Lys Glu Ala Pro Gly Ala Asp Thr Gln Val Arg Cys Glu Arg
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Ser Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Thr Glu Arg
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Glu Gly Lys Glu Gly Thr Ala Pro Val Leu Val Pro Lys Gly Glu Arg
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965

970

975

Ser Glu Glu Pro Thr Arg Arg His Arg Ala Lys His Lys Val Pro Pro
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Val Glu Gly Asp Lys Glu Thr Arg Asn His Gln Pro Lys Glu Pro
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Phe Cys Leu Ser Pro Thr Asn Leu Leu Arg Arg Phe Cys His Tyr
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Ile Val Thr Met Arg Tyr Phe Glu Met Val Ile Leu Val Val Ile
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Ala Leu Ser Ser Ile Ala Leu Ala Ala Glu Asp Pro Val Arg Thr
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Asp Ser Phe Arg Asn Asn Ala Leu Lys Tyr Met Asp Tyr Ile Phe
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Ala Cys Asp Pro His Ala Asn Ala Ser Glu Cys Gly Ser Asp Phe
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Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu
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Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr
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Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg Thr Ala Leu
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Asn Ser Gly Arg Ser Ser Arg Thr Ser Tyr Val Ser Ser Leu Thr
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Ser Gln Ser His Pro Leu Arg Arg Val Pro Asn Gly Tyr His Cys
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Ser	Leu	Phe	Val	Phe	Ser	Glu	Asp	Asn	Val	Val	Arg	Lys	Tyr	Ala	Lys		
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cgc	atc	acc	gag	tgg	cct	cca	ttc	gag	tat	atg	atc	ctg	gcc	acc	atc	460	
Arg	Ile	Thr	Glu	Trp	Pro	Pro	Phe	Glu	Tyr	Met	Ile	Leu	Ala	Thr	Ile		
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Asp	Lys	Thr	Pro	Met	Ser	Glu	Arg	Leu	Asp	Asp	Thr	Glu	Pro	Tyr	Phe		
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Ile	Gly	Ile	Phe	Cys	Phe	Glu	Ala	Gly	Ile	Lys	Ile	Ile	Ala	Leu	Gly		
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Phe	Val	Phe	His	Lys	Gly	Ser	Tyr	Leu	Arg	Asn	Gly	Trp	Asn	Val	Met		
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Phe	Asp	Leu	Arg	Thr	Leu	Arg	Ala	Val	Arg	Val	Leu	Arg	Pro	Leu	Lys		
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Leu	Val	Ser	Gly	Ile	Pro	Ser	Leu	Gln	Val	Val	Leu	Lys	Ser	Ile	Met		
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Lys	Ala	Met	Val	Pro	Leu	Leu	Gln	Ile	Gly	Leu	Leu	Leu	Phe	Phe	Ala		
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His	Lys	Ala	Cys	Phe	Pro	Asn	Ser	Thr	Asp	Ala	Glu	Pro	Val	Gly	Asp		
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Phe	Pro	Cys	Gly	Lys	Glu	Ala	Pro	Ala	Arg	Leu	Cys	Glu	Gly	Asp	Thr		
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Glu	Cys	Arg	Glu	Tyr	Trp	Pro	Gly	Pro	Asn	Phe	Gly	Ile	Thr	Asn	Phe		

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Asp	Asn	Ile	Leu	Phe	Ala	Ile	Leu	Thr	Val	Phe	Gln	Cys	Ile	Thr	Met	
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Glu	Gly	Trp	Thr	Asp	Ile	Leu	Tyr	Asn	Thr	Asn	Asp	Ala	Ala	Gly	Asn	
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acc	tgg	aac	tgg	ctc	tac	ttc	atc	cct	ctc	atc	atc	atc	ggc	tcc	ttc	1180
Thr	Trp	Asn	Trp	Leu	Tyr	Phe	Ile	Pro	Leu	Ile	Ile	Ile	Gly	Ser	Phe	
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Phe	Met	Leu	Asn	Leu	Val	Leu	Gly	Val	Leu	Ser	Gly	Glu	Phe	Ala	Lys	
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Glu	Arg	Glu	Arg	Val	Glu	Asn	Arg	Arg	Ala	Phe	Leu	Lys	Leu	Arg	Arg	
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Gln	Gln	Gln	Ile	Glu	Arg	Glu	Leu	Asn	Gly	Tyr	Leu	Glu	Trp	Ile	Phe	
		380					385					390				
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Lys	Ala	Glu	Glu	Val	Met	Leu	Ala	Glu	Glu	Asp	Arg	Asn	Ala	Glu	Glu	
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Lys	Ser	Pro	Leu	Asp	Val	Leu	Lys	Arg	Ala	Ala	Thr	Lys	Lys	Ser	Arg	
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Asn	Asp	Leu	Ile	His	Ala	Glu	Glu	Gly	Glu	Asp	Arg	Phe	Ala	Asp	Leu	
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Cys	Ala	Val	Gly	Ser	Pro	Phe	Ala	Arg	Ala	Ser	Leu	Lys	Ser	Gly	Lys	
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Thr	Glu	Ser	Ser	Ser	Tyr	Phe	Arg	Arg	Lys	Glu	Lys	Met	Phe	Arg	Phe	
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Phe	Ile	Arg	Arg	Met	Val	Lys	Ala	Gln	Ser	Phe	Tyr	Trp	Val	Val	Leu	
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Cys	Val	Val	Ala	Leu	Asn	Thr	Leu	Cys	Val	Ala	Met	Val	His	Tyr	Asn	
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cag	ccg	cgg	cgg	ctt	acc	acg	acc	ctg	tat	ttt	gca	gag	ttt	gtt	ttc	1708
Gln	Pro	Arg	Arg	Leu	Thr	Thr	Thr	Leu	Tyr	Phe	Ala	Glu	Phe	Val	Phe	
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ccc gag ggc gtc gac cct ccg cgc agg cac cac cgg cac cgc gac aag Pro Glu Gly Val Asp Pro Pro Arg Arg His His Arg His Arg Asp Lys 845 850 855	2716
gac aag acc ccc gcg gcg ggg gac cag gac cga gca gag gcc ccg aag Asp Lys Thr Pro Ala Ala Gly Asp Gln Asp Arg Ala Glu Ala Pro Lys 860 865 870	2764
gcg gag agc ggg gag ccc ggt gcc cgg gag gag cgg ccg cgg ccg cac Ala Glu Ser Gly Glu Pro Gly Ala Arg Glu Glu Arg Pro Arg Pro His 875 880 885	2812
cgc agc cac agc aag gag gcc gcg ggg ccc ccg gag gcg cgg agc gag Arg Ser His Ser Lys Glu Ala Ala Gly Pro Pro Glu Ala Arg Ser Glu 890 895 900 905	2860
cgc ggc cga ggc cca ggc ccc gag ggc ggc cgg cgg cac cac cgg cgc Arg Gly Arg Gly Pro Gly Pro Glu Gly Gly Arg Arg His His Arg Arg 910 915 920	2908
ggc tcc ccg gag gag gcg gcc gag cgg gag ccc cga cgc cac cgc gcg Gly Ser Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala 925 930 935	2956
cac cgg cac cag gat ccg agc aag gag tgc gcc ggc gcc aag ggc gag His Arg His Gln Asp Pro Ser Lys Glu Cys Ala Gly Ala Lys Gly Glu 940 945 950	3004
cgg cgc gcg cgg cac cgc ggc ggc ccc cga gcg ggg ccc cgg gag gcg Arg Arg Ala Arg His Arg Gly Gly Pro Arg Ala Gly Pro Arg Glu Ala 955 960 965	3052
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Glu Ser Gly	Glu Glu Pro	Ala Arg Arg	His Arg Ala	Arg His Lys	Ala	
970		975	980		985	
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Gln Pro Ala	His Glu Ala	Val Glu Lys	Glu Thr Thr	Glu Lys Glu	Ala	
	990		995		1000	
acg gag aag	gag gct gag	ata gtg gaa	gcc gac aag	gaa aag gag		3193
Thr Glu Lys	Glu Ala Glu	Ile Val Glu	Ala Asp Lys	Glu Lys Glu		
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ctc cgg aac	cac cag ccc	cgg gag cca	cac tgt gac	ctg gag acc		3238
Leu Arg Asn	His Gln Pro	Arg Glu Pro	His Cys Asp	Leu Glu Thr		
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agt ggg act	gtg act gtg	ggt ccc atg	cac aca ctg	ccc agc acc		3283
Ser Gly Thr	Val Thr Val	Gly Pro Met	His Thr Leu	Pro Ser Thr		
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tgt ctc cag	aag gtg gag	gaa cag cca	gag gat gca	gac aat cag		3328
Cys Leu Gln	Lys Val Glu	Glu Glu Gln	Pro Glu Asp	Ala Asp Asn	Gln	
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cgg aac gtc	act cgc atg	ggc agt cag	ccc cca gac	ccg aac act		3373
Arg Asn Val	Thr Arg Met	Gly Ser Gln	Pro Pro Asp	Pro Asn Thr		
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att gta cat	atc cca gtg	atg ctg acg	ggc cct ctt	ggg gaa gcc		3418
Ile Val His	Ile Pro Val	Met Leu Thr	Gly Pro Leu	Gly Glu Ala		
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acg gtc gtt	ccc agt ggt	aac gtg gac	ctg gaa agc	caa gca gag		3463
Thr Val Val	Pro Ser Gly	Asn Val Asp	Leu Glu Ser	Gln Ala Glu		
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ggg aag aag	gag gtg gaa	gcg gat gac	gtg atg agg	agc ggc ccc		3508
Gly Lys Lys	Glu Val Glu	Ala Asp Asp	Val Met Arg	Ser Gly Pro		
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cgg cct atc	gtc cca tac	agc tcc atg	ttc tgt tta	agc ccc acc		3553
Arg Pro Ile	Val Pro Tyr	Ser Ser Met	Phe Cys Leu	Ser Pro Thr		
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aac ctg ctc	cgc cgc ttc	tgc cac tac	atc gtg acc	atg agg tac		3598
Asn Leu Leu	Arg Arg Phe	Cys His Tyr	Ile Val Thr	Met Arg Tyr		
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ttc gag gtg	gtc att ctc	gtg gtc atc	gcc ttg agc	agc atc gcc		3643
Phe Glu Val	Val Ile Leu	Val Val Ile	Ala Leu Ser	Ser Ile Ala		
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ctg gct gct	gag gac cca	gtg cgc aca	gac tcg ccc	agg aac aac		3688
Leu Ala Ala	Glu Asp Pro	Val Arg Thr	Asp Ser Pro	Arg Asn Asn		
	1170		1175		1180	
gct ctg aaa	tac ctg gat	tac att ttc	act ggt gtc	ttt acc ttt		3733
Ala Leu Lys	Tyr Leu Asp	Tyr Ile Phe	Thr Gly Val	Phe Thr Phe		

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Glu Met Val Ile Lys Met Ile Asp Leu Gly Leu Leu Leu His Pro			
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gga gcc tat ttc cgg gac ttg tgg aac att ctg gac ttc att gtg			3823
Gly Ala Tyr Phe Arg Asp Leu Trp Asn Ile Leu Asp Phe Ile Val			
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gtc agt ggc gcc ctg gtg gcg ttt gct ttc tca gga tcc aaa ggg			3868
Val Ser Gly Ala Leu Val Ala Phe Ala Phe Ser Gly Ser Lys Gly			
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aaa gac atc aat acc atc aag tct ctg aga gtc ctt cgt gtc ctg			3913
Lys Asp Ile Asn Thr Ile Lys Ser Leu Arg Val Leu Arg Val Leu			
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cgg ccc ctg aag acc atc aaa cgg ctg ccc aag ctg aag gct gtg			3958
Arg Pro Leu Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val			
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Phe Asp Cys Val Val Asn Ser Leu Lys Asn Val Leu Asn Ile Leu			
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att gtc tac atg ctg ttc atg ttc ata ttt gcc gtc att gcg gtg			4048
Ile Val Tyr Met Leu Phe Met Phe Ile Phe Ala Val Ile Ala Val			
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cag ctg ttc aaa ggg aag ttt ttc tac tgc aca gat gaa tcc aag			4093
Gln Leu Phe Lys Gly Lys Phe Phe Tyr Cys Thr Asp Glu Ser Lys			
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Glu Leu Glu Arg Asp Cys Arg Gly Gln Tyr Leu Asp Tyr Glu Lys			
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Glu Glu Val Glu Ala Gln Pro Arg Gln Trp Lys Lys Tyr Asp Phe			
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cac tac gac aat gtg ctg tgg gct ctg ctg acg ctg ttc aca gtg			4228
His Tyr Asp Asn Val Leu Trp Ala Leu Leu Thr Leu Phe Thr Val			
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Ser Thr Gly Glu Gly Trp Pro Met Val Leu Lys His Ser Val Asp			
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gcc acc tat gag gag cag ggt cca agc cct ggg tac cgc atg gag			4318
Ala Thr Tyr Glu Glu Gln Gly Pro Ser Pro Gly Tyr Arg Met Glu			
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Leu Ser Ile Phe Tyr Val Val Tyr Phe Val Val Phe Pro Phe Phe			
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Phe Val Asn Ile	Phe Val Ala Leu Ile	Ile Ile Thr Phe Gln Glu	
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Gln Gly Asp Lys	Val Met Ser Glu Cys	Ser Leu Glu Lys Asn Glu	
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agg gct tgc att	gac ttc gcc atc agc	gcc aaa ccc ctg aca cgg	4498
Arg Ala Cys Ile	Asp Phe Ala Ile Ser	Ala Lys Pro Leu Thr Arg	
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tac atg ccc caa	aac cgg cag tcg ttc	cag tat aag acg tgg aca	4543
Tyr Met Pro Gln	Asn Arg Gln Ser Phe	Gln Tyr Lys Thr Trp Thr	
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Phe Val Val Ser	Pro Pro Phe Glu Tyr	Phe Ile Met Ala Met Ile	
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gcc ctc aac act	gtg gtg ctg atg atg	aag ttc tat gat gca ccc	4633
Ala Leu Asn Thr	Val Val Leu Met Met	Lys Phe Tyr Asp Ala Pro	
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tat gag tac gag	ctg atg ctg aaa tgc	ctg aac atc gtg ttc aca	4678
Tyr Glu Tyr Glu	Leu Met Leu Lys Cys	Leu Asn Ile Val Phe Thr	
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Ser Met Phe Ser	Met Glu Cys Val Leu	Lys Ile Ile Ala Phe Gly	
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gtg ctg aac tat	ttc aga gat gcc tgg	aat gtc ttt gac ttt gtc	4768
Val Leu Asn Tyr	Phe Arg Asp Ala Trp	Asn Val Phe Asp Phe Val	
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act gtg ttg gga	agt att act gat att	tta gta aca gag att gcg	4813
Thr Val Leu Gly	Ser Ile Thr Asp Ile	Leu Val Thr Glu Ile Ala	
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gaa acg aac aat	ttc atc aac ctc agc	ttc ctc cgc ctc ttt cga	4858
Glu Thr Asn Asn	Phe Ile Asn Leu Ser	Phe Leu Arg Leu Phe Arg	
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Ala Ala Arg Leu	Ile Lys Leu Leu Arg	Gln Gly Tyr Thr Ile Arg	
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Ile Leu Leu Trp	Thr Phe Val Gln Ser	Phe Lys Ala Leu Pro Tyr	
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Val Cys Leu Leu	Ile Ala Met Leu Phe	Phe Ile Tyr Ala Ile Ile	
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Gly Met Gln Val Phe Gly Asn Ile Ala Leu Asp Asp Asp Thr Ser	
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Ile Asn Arg His Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met	
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Leu Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met	
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Thr Lys Gln His Gln Cys Asp Ala Glu Leu Arg Lys Glu Ile Ser	
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Pro	Pro	His	Lys	Pro	Asp	Glu	Met	Thr	Val	Gly	Lys	Val	Tyr	Ala	
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Val	Ser	Leu	Phe	His	Pro	Leu	Lys	Ala	Thr	Leu	Glu	Gln	Thr	Gln	
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Pro	Ala	Val	Leu	Arg	Gly	Ala	Arg	Val	Phe	Leu	Arg	Gln	Lys	Ser	
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Ser	Thr	Ser	Leu	Ser	Asn	Gly	Gly	Ala	Ile	Gln	Asn	Gln	Glu	Ser	
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Ala	Glu	Thr	Gln	Pro	Val	Thr	Asp	Ala	Ser	Pro	Met	Lys	Arg	Ser	
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His	His	His	Arg	Cys	His	Arg	Arg	Arg	Asp	Arg	Lys	Gln	Arg	Ser						
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Gln	Glu	Arg	Arg	Gln	Pro	Ser	Ser	Ser	Ser	Ser	Glu	Lys	Gln	Arg						
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Ser	Arg	Thr	Ser	Tyr	Val	Ser	Ser	Leu	Thr	Ser	Gln	Ser	His	Pro	
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His Trp Cys

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Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
50 55 60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
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Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
85 90 95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
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Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
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Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
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Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
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Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
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Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
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Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
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Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
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Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
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Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
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Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
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Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
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Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
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Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
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Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
325 330 335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
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Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
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Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
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Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
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Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
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Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
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Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
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Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
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Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
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Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
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Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Arg Arg Leu Thr Thr
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Thr Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
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Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
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Val Val Trp Ala Ala Ile Lys Pro Gly Ser Ser Phe Gly Ile Ser Val
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Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
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Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
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Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
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Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
675 680 685

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Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
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Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
740 745 750

Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp

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Glu	Ala	Leu	Tyr	Ser	Glu	Met	Asp	Pro	Glu	Glu	Arg	Leu	Arg	Phe	Ala
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Thr	Thr	Arg	His	Leu	Arg	Pro	Asp	Met	Lys	Thr	His	Leu	Asp	Arg	Pro
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Lys	Ala	Arg	Pro	Glu	Ala	Ala	Glu	Ala	Pro	Glu	Gly	Val	Asp	Pro	Pro
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Gly	Pro	Arg	Ala	Gly	Pro	Arg	Glu	Ala	Glu	Ser	Gly	Glu	Glu	Pro	Ala
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Val Glu Ala Asp Lys Glu Lys Glu Leu Arg Asn His Gln Pro Arg
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Val Ile Ala Leu Ser Ser Ile Ala Leu Ala Ala Glu Asp Pro Val
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Arg Thr Asp Ser Pro Arg Asn Asn Ala Leu Lys Tyr Leu Asp Tyr
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Ile Phe Thr Gly Val Phe Thr Phe Glu Met Val Ile Lys Met Ile
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Arg	Gln	Trp	Lys	Lys	Tyr	Asp	Phe	His	Tyr	Asp	Asn	Val	Leu	Trp
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Ala	Leu	Leu	Thr	Leu	Phe	Thr	Val	Ser	Thr	Gly	Glu	Gly	Trp	Pro
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Pro	Ser	Pro	Gly	Tyr	Arg	Met	Glu	Leu	Ser	Ile	Phe	Tyr	Val	Val
1385						1390					1395			
Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Phe	Val	Asn	Ile	Phe	Val	Ala
1400						1405					1410			

Leu	Ile	Ile	Ile	Thr	Phe	Gln	Glu	Gln	Gly	Asp	Lys	Val	Met	Ser
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Pro Arg Ser Tyr Phe Arg Ser Ser Phe Asn Cys Phe Asp Phe Gly Val	
540 545 550	
atc gtg ggg agc gtc ttt gaa gtg gtc tgg gcg gcc atc aag ccg gga	1852
Ile Val Gly Ser Val Phe Glu Val Val Trp Ala Ala Ile Lys Pro Gly	
555 560 565	
agc tcc ttt ggg atc agt gtg ctg cgg gcc ctg cgc ctg ctg agg atc	1900
Ser Ser Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu Arg Ile	
570 575 580 585	
ttc aaa gtc acg aag tac tgg agc tcc ctg cgg aac ctg gtg gtg tcc	1948
Phe Lys Val Thr Lys Tyr Trp Ser Ser Leu Arg Asn Leu Val Val Ser	
590 595 600	
ctg ctg aac tcc atg aag tcc atc atc agc ctg ctg ttc ttg ctg ttc	1996
Leu Leu Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe	
605 610 615	
ctg ttc att gtg gtc ttc gcc ctg ctg ggg atg cag ctg ttt ggg gga	2044
Leu Phe Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe Gly Gly	
620 625 630	
cag ttc aac ttc cag gat gag act ccc aca acc aac ttc gac acc ttc	2092
Gln Phe Asn Phe Gln Asp Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe	
635 640 645	
cct gcc gcc atc ctg act gtc ttc cag atc ctg acg gga gag gac tgg	2140
Pro Ala Ala Ile Leu Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp	
650 655 660 665	
aat gca gtg atg tat cac ggg atc gaa tgc caa ggc ggc gtc agc aaa	2188
Asn Ala Val Met Tyr His Gly Ile Glu Ser Gln Gly Gly Val Ser Lys	
670 675 680	
ggc atg ttc tgc tcc ttt tac ttc att gtc ctg aca ctg ttc gga aac	2236
Gly Met Phe Ser Ser Phe Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn	
685 690 695	
tac act ctg ctg aat gtc ttt ctg gcc atc gct gtg gac aac ctg gcc	2284
Tyr Thr Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala	
700 705 710	
aac gcc caa gag ctg acc aag gat gaa gag gag atg gaa gaa gca gcc	2332
Asn Ala Gln Glu Leu Thr Lys Asp Glu Glu Glu Met Glu Glu Ala Ala	
715 720 725	
aat cag aag ctt gct ctg caa aag gcc aaa gaa gtg gct gaa gtc agc	2380
Asn Gln Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu Val Ser	
730 735 740 745	
ccc atg tct gcc gcg aac atc tcc atc gcc gcc agg cag cag aac tgc	2428
Pro Met Ser Ala Ala Asn Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser	
750 755 760	
gcc aag gcg cgc tcy gtg tgg gag cag cgg gcc agc cag cta cgg ctg	2476

Ala Lys Ala Arg Ser Val Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu	
765 770 775	
cag aac ctg cgg gcc agc tgc gag gcg ctg tac agc gag atg gac ccc	2524
Gln Asn Leu Arg Ala Ser Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro	
780 785 790	
gag gag cgg ctg cgc ttc gcc act acg cgc cac ctg cgg ccc gac atg	2572
Glu Glu Arg Leu Arg Phe Ala Thr Thr Arg His Leu Arg Pro Asp Met	
795 800 805	
aag acg cac ctg gac cgg ccg ctg gtg gtg gag ctg ggc cgc gac ggc	2620
Lys Thr His Leu Asp Arg Pro Leu Val Val Glu Leu Gly Arg Asp Gly	
810 815 820 825	
gcg cgg ggg ccc gtg gga ggc aaa gcc cga cct gag gct gcg gag gcc	2668
Ala Arg Gly Pro Val Gly Gly Lys Ala Arg Pro Glu Ala Ala Glu Ala	
830 835 840	
ccc gag ggc gtc gac cct ccg cgc agg cac cac cgg cac cgc gac aag	2716
Pro Glu Gly Val Asp Pro Pro Arg Arg His His Arg His Arg Asp Lys	
845 850 855	
gac aag acc ccc gcg gcg ggg gac cag gac cga gca gag gcc ccg aag	2764
Asp Lys Thr Pro Ala Ala Gly Asp Gln Asp Arg Ala Glu Ala Pro Lys	
860 865 870	
gcg gag agc ggg gag ccc ggt gcc ccg gag gag cgg ccg cgg ccg cac	2812
Ala Glu Ser Gly Glu Pro Gly Ala Arg Glu Glu Arg Pro Arg Pro His	
875 880 885	
cgc agc cac agc aag gag gcc gcg ggg ccc ccg gag gcg cgg agc gag	2860
Arg Ser His Ser Lys Glu Ala Ala Gly Pro Pro Glu Ala Arg Ser Glu	
890 895 900 905	
cgc ggc cga ggc cca ggc ccc gag ggc ggc cgg cgg cac cac cgg cgc	2908
Arg Gly Arg Gly Pro Gly Pro Glu Gly Gly Arg Arg His His Arg Arg	
910 915 920	
ggc tcc ccg gag gag gcg gcc gag ccg gag ccc cga cgc cac cgc gcg	2956
Gly Ser Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala	
925 930 935	
cac cgg cac cag gat ccg agc aag gag tgc gcc ggc gcc aag ggc gag	3004
His Arg His Gln Asp Pro Ser Lys Glu Cys Ala Gly Ala Lys Gly Glu	
940 945 950	
cgg cgc gcg cgg cac cgc ggc ggc ccc cga gcg ggg ccc cgg gag gcg	3052
Arg Arg Ala Arg His Arg Gly Gly Pro Arg Ala Gly Pro Arg Glu Ala	
955 960 965	
gag agc ggg gag gag ccg gcg ccg ccg cac ccg gcc cgg cac aag gcg	3100
Glu Ser Gly Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys Ala	
970 975 980 985	
cag cct gct cac gag gct gtg gag aag gag acc acg gag aag gag gcc	3148
Gln Pro Ala His Glu Ala Val Glu Lys Glu Thr Thr Glu Lys Glu Ala	

990								995				1000				
acg	gag	aag	gag	gct	gag	ata	gtg	gaa	gcc	gac	aag	gaa	aag	gag	3193	
Thr	Glu	Lys	Glu	Ala	Glu	Ile	Val	Glu	Ala	Asp	Lys	Glu	Lys	Glu		
			1005					1010					1015			
ctc	cgg	aac	cac	cag	ccc	cgg	gag	cca	cac	tgt	gac	ctg	gag	acc	3238	
Leu	Arg	Asn	His	Gln	Pro	Arg	Glu	Pro	His	Cys	Asp	Leu	Glu	Thr		
			1020					1025					1030			
agt	ggg	act	gtg	act	gtg	ggg	ccc	atg	cac	aca	ctg	ccc	agc	acc	3283	
Ser	Gly	Thr	Val	Thr	Val	Gly	Pro	Met	His	Thr	Leu	Pro	Ser	Thr		
			1035					1040					1045			
tgt	ctc	cag	aag	gtg	gag	gaa	cag	cca	gag	gat	gca	gac	aat	cag	3328	
Cys	Leu	Gln	Lys	Val	Glu	Glu	Gln	Pro	Glu	Asp	Ala	Asp	Asn	Gln		
			1050					1055					1060			
cgg	aac	gtc	act	cgc	atg	ggc	agt	cag	ccc	cca	gac	ccg	aac	act	3373	
Arg	Asn	Val	Thr	Arg	Met	Gly	Ser	Gln	Pro	Pro	Asp	Pro	Asn	Thr		
			1065					1070					1075			
att	gta	cat	atc	cca	gtg	atg	ctg	acg	ggc	cct	ctt	ggg	gaa	gcc	3418	
Ile	Val	His	Ile	Pro	Val	Met	Leu	Thr	Gly	Pro	Leu	Gly	Glu	Ala		
			1080					1085					1090			
acg	gtc	gtt	ccc	agt	ggg	aac	gtg	gac	ctg	gaa	agc	caa	gca	gag	3463	
Thr	Val	Val	Pro	Ser	Gly	Asn	Val	Asp	Leu	Glu	Ser	Gln	Ala	Glu		
			1095					1100					1105			
ggg	aag	aag	gag	gtg	gaa	gcg	gat	gac	gtg	atg	agg	agc	ggc	ccc	3508	
Gly	Lys	Lys	Glu	Val	Glu	Ala	Asp	Asp	Val	Met	Arg	Ser	Gly	Pro		
			1110					1115					1120			
cgg	cct	atc	gtc	cca	tac	agc	tcc	atg	ttc	tgt	tta	agc	ccc	acc	3553	
Arg	Pro	Ile	Val	Pro	Tyr	Ser	Ser	Met	Phe	Cys	Leu	Ser	Pro	Thr		
			1125					1130					1135			
aac	ctg	ctc	cgc	cgc	ttc	tgc	cac	tac	atc	gtg	acc	atg	agg	tac	3598	
Asn	Leu	Leu	Arg	Arg	Phe	Cys	His	Tyr	Ile	Val	Thr	Met	Arg	Tyr		
			1140					1145					1150			
ttc	gag	gtg	gtc	att	ctc	gtg	gtc	atc	gcc	ttg	agc	agc	atc	gcc	3643	
Phe	Glu	Val	Val	Ile	Leu	Val	Val	Ile	Ala	Leu	Ser	Ser	Ile	Ala		
			1155					1160					1165			
ctg	gct	gct	gag	gac	cca	gtg	cgc	aca	gac	tcg	ccc	agg	aac	aac	3688	
Leu	Ala	Ala	Glu	Asp	Pro	Val	Arg	Thr	Asp	Ser	Pro	Arg	Asn	Asn		
			1170					1175					1180			
gct	ctg	aaa	tac	ctg	gat	tac	att	ttc	act	ggg	gtc	ttt	acc	ttt	3733	
Ala	Leu	Lys	Tyr	Leu	Asp	Tyr	Ile	Phe	Thr	Gly	Val	Phe	Thr	Phe		
			1185					1190					1195			
gag	atg	gtg	ata	aag	atg	atc	gac	ttg	gga	ctg	ctg	ctt	cac	cct	3778	
Glu	Met	Val	Ile	Lys	Met	Ile	Asp	Leu	Gly	Leu	Leu	Leu	His	Pro		
			1200					1205					1210			

gga gcc tat ttc	cgg gac ttg tgg aac	att ctg gac ttc att	gtg	3823
Gly Ala Tyr Phe	Arg Asp Leu Trp Asn	Ile Leu Asp Phe Ile	Val	
1215	1220	1225		
gtc agt ggc gcc	ctg gtg gcg ttt gct	ttc tca gga tcc aaa	ggg	3868
Val Ser Gly Ala	Leu Val Ala Phe Ala	Phe Ser Gly Ser Lys	Gly	
1230	1235	1240		
aaa gac atc aat	acc atc aag tct ctg	aga gtc ctt cgt gtc	ctg	3913
Lys Asp Ile Asn	Thr Ile Lys Ser Leu	Arg Val Leu Arg Val	Leu	
1245	1250	1255		
cgg ccc ctc aag	acc atc aaa cgg ctg	ccc aag ctc aag gct	gtg	3958
Arg Pro Leu Lys	Thr Ile Lys Arg Leu	Pro Lys Leu Lys Ala	Val	
1260	1265	1270		
ttt gac tgt gtg	gtg aac tcc ctg aag	aat gtc ctc aac atc	ttg	4003
Phe Asp Cys Val	Val Asn Ser Leu Lys	Asn Val Leu Asn Ile	Leu	
1275	1280	1285		
att gtc tac atg	ctc ttc atg ttc ata	ttt gcc gtc att gcg	gtg	4048
Ile Val Tyr Met	Leu Phe Met Phe Ile	Phe Ala Val Ile Ala	Val	
1290	1295	1300		
cag ctc ttc aaa	ggg aag ttt ttc tac	tgc aca gat gaa tcc	aag	4093
Gln Leu Phe Lys	Gly Lys Phe Phe Tyr	Cys Thr Asp Glu Ser	Lys	
1305	1310	1315		
gag ctg gag agg	gac tgc agg ggt cag	tat ttg gat tat gag	aag	4138
Glu Leu Glu Arg	Asp Cys Arg Gly Gln	Tyr Leu Asp Tyr Glu	Lys	
1320	1325	1330		
gag gaa gtg gaa	gct cag ccc agg cag	tgg aag aaa tac gac	ttt	4183
Glu Glu Val Glu	Ala Gln Pro Arg Gln	Trp Lys Lys Tyr Asp	Phe	
1335	1340	1345		
cac tac gac aat	gtg ctc tgg gct ctg	ctg acg ctg ttc aca	gtg	4228
His Tyr Asp Asn	Val Leu Trp Ala Leu	Leu Thr Leu Phe Thr	Val	
1350	1355	1360		
tcc acg gga gaa	ggc tgg ccc atg gtg	ctg aaa cac tcc gtg	gat	4273
Ser Thr Gly Glu	Gly Trp Pro Met Val	Leu Lys His Ser Val	Asp	
1365	1370	1375		
gcc acc tat gag	gag cag ggt cca agc	cct ggg tac cgc atg	gag	4318
Ala Thr Tyr Glu	Glu Gln Gly Pro Ser	Pro Gly Tyr Arg Met	Glu	
1380	1385	1390		
ctg tcc atc ttc	tac gtg gtc tac ttt	gtg gtc ttt ccc ttc	ttc	4363
Leu Ser Ile Phe	Tyr Val Val Tyr Phe	Val Val Phe Pro Phe	Phe	
1395	1400	1405		
ttc gtc aac atc	ttt gtg gct ttg atc	atc atc acc ttc cag	gag	4408
Phe Val Asn Ile	Phe Val Ala Leu Ile	Ile Ile Thr Phe Gln	Glu	
1410	1415	1420		

cag ggg gac aag gtg atg tct gaa tgc agc ctg gag aag aac gag	4453
Gln Gly Asp Lys Val Met Ser Glu Cys Ser Leu Glu Lys Asn Glu	
1425 1430 1435	
agg gct tgc att gac ttc gcc atc agc gcc aaa ccc ctg aca cgg	4498
Arg Ala Cys Ile Asp Phe Ala Ile Ser Ala Lys Pro Leu Thr Arg	
1440 1445 1450	
tac atg ccc caa aac cgg cag tgc ttc cag tat aag acg tgg aca	4543
Tyr Met Pro Gln Asn Arg Glu Ser Phe Gln Tyr Lys Thr Trp Thr	
1455 1460 1465	
ttt gtg gtc tcc ccg ccc ttt gaa tac ttc atc atg gcc atg ata	4588
Phe Val Val Ser Pro Pro Phe Glu Tyr Phe Ile Met Ala Met Ile	
1470 1475 1480	
gcc ctc aac act gtg gtg ctg atg atg aag ttc tat gat gca ccc	4633
Ala Leu Asn Thr Val Val Leu Met Met Lys Phe Tyr Asp Ala Pro	
1485 1490 1495	
tat gag tac gag ctg atg ctg aaa tgc ctg aac atc gtg ttc aca	4678
Tyr Glu Tyr Glu Leu Met Leu Lys Cys Leu Asn Ile Val Phe Thr	
1500 1505 1510	
tcc atg ttc tcc atg gaa tgc gtg ctg aag atc atc gcc ttt ggg	4723
Ser Met Phe Ser Met Glu Cys Val Leu Lys Ile Ile Ala Phe Gly	
1515 1520 1525	
gtg ctg aac tat ttc aga gat gcc tgg aat gtc ttt gac ttt gtc	4768
Val Leu Asn Tyr Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val	
1530 1535 1540	
act gtg ttg gga agt att act gat att tta gta aca gag att gcg	4813
Thr Val Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala	
1545 1550 1555	
gaa acg aac aat ttc atc aac ctc agc ttc ctc cgc ctc ttt cga	4858
Glu Thr Asn Asn Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg	
1560 1565 1570	
gct gcg cgg ctg atc aag ctg ctc cgc cag ggc tac acc atc cgc	4903
Ala Ala Arg Leu Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg	
1575 1580 1585	
atc ctg ctg tgg acc ttt gtc cag tcc ttc aag gcc ctg ccc tac	4948
Ile Leu Leu Trp Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr	
1590 1595 1600	
gtg tgt ctg ctc att gcc atg ctg ttc ttc atc tac gcc atc atc	4993
Val Cys Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile	
1605 1610 1615	
ggc atg cag gtg ttt ggg aat att gcc ctg gat gat gac acc agc	5038
Gly Met Gln Val Phe Gly Asn Ile Ala Leu Asp Asp Asp Thr Ser	
1620 1625 1630	
atc aac cgc cac aac aac ttc cgg acg ttt ttg caa gcc ctg atg	5083

Ile	Asn	Arg	His	Asn	Asn	Phe	Arg	Thr	Phe	Leu	Gln	Ala	Leu	Met	
			1635					1640					1645		
ctg	ctg	ttc	agg	agc	gcc	acg	ggg	gag	gcc	tgg	cac	gag	atc	atg	5128
Leu	Leu	Phe	Arg	Ser	Ala	Thr	Gly	Glu	Ala	Trp	His	Glu	Ile	Met	
			1650					1655					1660		
ctg	tcc	tgc	ctg	agc	aac	cag	gcc	tgt	gat	gag	cag	gcc	aat	gcc	5173
Leu	Ser	Cys	Leu	Ser	Asn	Gln	Ala	Cys	Asp	Glu	Gln	Ala	Asn	Ala	
			1665					1670					1675		
acc	gag	tgt	gga	agt	gac	ttt	gcc	tac	ttc	tac	ttc	gtc	tcc	ttc	5218
Thr	Glu	Cys	Gly	Ser	Asp	Phe	Ala	Tyr	Phe	Tyr	Phe	Val	Ser	Phe	
			1680					1685					1690		
atc	ttc	ctg	tgc	tcc	ttt	ctg	atg	ttg	aac	ctc	ttt	gtg	gct	gtg	5263
Ile	Phe	Leu	Cys	Ser	Phe	Leu	Met	Leu	Asn	Leu	Phe	Val	Ala	Val	
			1695					1700					1705		
atc	atg	gac	aat	ttt	gag	tac	ctc	acg	cgg	gac	tct	tcc	atc	cta	5308
Ile	Met	Asp	Asn	Phe	Glu	Tyr	Leu	Thr	Arg	Asp	Ser	Ser	Ile	Leu	
			1710					1715					1720		
ggt	cct	cac	cac	ttg	gat	gag	ttc	atc	cgg	gtc	tgg	gct	gaa	tac	5353
Gly	Pro	His	His	Leu	Asp	Glu	Phe	Ile	Arg	Val	Trp	Ala	Glu	Tyr	
			1725					1730					1735		
gac	ccg	gct	gcg	tgt	ggg	cgc	atc	agt	tac	aat	gac	atg	ttt	gag	5398
Asp	Pro	Ala	Ala	Cys	Gly	Arg	Ile	Ser	Tyr	Asn	Asp	Met	Phe	Glu	
			1740					1745					1750		
atg	ctg	aaa	cac	atg	tcc	ccg	cct	ctg	ggg	ctg	ggg	aag	aaa	tgc	5443
Met	Leu	Lys	His	Met	Ser	Pro	Pro	Leu	Gly	Leu	Gly	Lys	Lys	Cys	
			1755					1760					1765		
cct	gct	cga	gtt	gct	tac	aag	cgc	ctg	gtt	cgc	atg	aac	atg	ccc	5488
Pro	Ala	Arg	Val	Ala	Tyr	Lys	Arg	Leu	Val	Arg	Met	Asn	Met	Pro	
			1770					1775					1780		
atc	tcc	aac	gag	gac	atg	act	gtt	cac	ttc	acg	tcc	acg	ctg	atg	5533
Ile	Ser	Asn	Glu	Asp	Met	Thr	Val	His	Phe	Thr	Ser	Thr	Leu	Met	
			1785					1790					1795		
gcc	ctc	atc	cgg	acg	gca	ctg	gag	atc	aag	ctg	gcc	cca	gct	ggg	5578
Ala	Leu	Ile	Arg	Thr	Ala	Leu	Glu	Ile	Lys	Leu	Ala	Pro	Ala	Gly	
			1800					1805					1810		
aca	aag	cag	cat	cag	tgt	gac	gcg	gag	ttg	agg	aag	gag	att	tcc	5623
Thr	Lys	Gln	His	Gln	Cys	Asp	Ala	Glu	Leu	Arg	Lys	Glu	Ile	Ser	
			1815					1820					1825		
gtt	gtg	tgg	gcc	aat	ctg	ccc	cag	aag	act	ttg	gac	ttg	ctg	gta	5668
Val	Val	Trp	Ala	Asn	Leu	Pro	Gln	Lys	Thr	Leu	Asp	Leu	Leu	Val	
			1830					1835					1840		
cca	ccc	cat	aag	cct	gat	gag	atg	aca	gtg	ggg	aag	gtt	tat	gca	5713
Pro	Pro	His	Lys	Pro	Asp	Glu	Met	Thr	Val	Gly	Lys	Val	Tyr	Ala	

1845	1850	1855	
gct ctg atg ata ttt gac ttc tac aag cag aac aaa acc acc aga	5758		
Ala Leu Met Ile Phe Asp Phe Tyr Lys Gln Asn Lys Thr Thr Arg			
1860	1865	1870	
gac cag atg cag cag gct cct gga ggc ctc tcc cag atg ggt cct	5803		
Asp Gln Met Gln Gln Ala Pro Gly Gly Leu Ser Gln Met Gly Pro			
1875	1880	1885	
gtg tcc ctg ttc cac cct ctg aag gcc acc ctg gag cag aca cag	5848		
Val Ser Leu Phe His Pro Leu Lys Ala Thr Leu Glu Gln Thr Gln			
1890	1895	1900	
ccg gct gtg ctc cga gga gcc cgg gtt ttc ctt cga cag aag agt	5893		
Pro Ala Val Leu Arg Gly Ala Arg Val Phe Leu Arg Gln Lys Ser			
1905	1910	1915	
tcc acc tcc ctc agc aat ggc ggg gcc ata caa aac caa gag agt	5938		
Ser Thr Ser Leu Ser Asn Gly Gly Ala Ile Gln Asn Gln Glu Ser			
1920	1925	1930	
ggc atc aaa gag tct gtc tcc tgg ggc act caa agg acc cag gat	5983		
Gly Ile Lys Glu Ser Val Ser Trp Gly Thr Gln Arg Thr Gln Asp			
1935	1940	1945	
gca ccc cat gag gcc agg cca ccc ctg gag cgt ggc cac tcc acg	6028		
Ala Pro His Glu Ala Arg Pro Pro Leu Glu Arg Gly His Ser Thr			
1950	1955	1960	
gag atc cct gtg ggg cgg tca gga gca ctg gct gtg gac gtt cag	6073		
Glu Ile Pro Val Gly Arg Ser Gly Ala Leu Ala Val Asp Val Gln			
1965	1970	1975	
atg cag agc ata acc cgg agg ggc cct gat ggg gag ccc cag cct	6118		
Met Gln Ser Ile Thr Arg Arg Gly Pro Asp Gly Glu Pro Gln Pro			
1980	1985	1990	
ggg ctg gag agc cag ggt cga gcg gcc tcc atg ccc cgc ctt gcg	6163		
Gly Leu Glu Ser Gln Gly Arg Ala Ala Ser Met Pro Arg Leu Ala			
1995	2000	2005	
gcc gag act cag ccc gtc aca gat gcc agc ccc atg aag cgc tcc	6208		
Ala Glu Thr Gln Pro Val Thr Asp Ala Ser Pro Met Lys Arg Ser			
2010	2015	2020	
atc tcc acg ctg gcc cag cgg ccc cgt ggg act cat ctt tgc agc	6253		
Ile Ser Thr Leu Ala Gln Arg Pro Arg Gly Thr His Leu Cys Ser			
2025	2030	2035	
acc acc ccg gac cgc cca ccc cct agc cag gcg tcg tcg cac cac	6298		
Thr Thr Pro Asp Arg Pro Pro Pro Ser Gln Ala Ser Ser His His			
2040	2045	2050	
cac cac cac cgc tgc cac cgc cgc agg gac agg aag cag agg tcc	6343		
His His His Arg Cys His Arg Arg Arg Asp Arg Lys Gln Arg Ser			
2055	2060	2065	

ctg gag aag ggg ccc agc ctg tct gcc gat atg gat ggc gca cca	6388
Leu Glu Lys Gly Pro Ser Leu Ser Ala Asp Met Asp Gly Ala Pro	
2070 2075 2080	
agc agt gct gtg ggg ccg ggg ctg ccc ccg gga gag ggg cct aca	6433
Ser Ser Ala Val Gly Pro Gly Leu Pro Pro Gly Glu Gly Pro Thr	
2085 2090 2095	
ggc tgc cgg cgg gaa cga gag cgc cgg cag gag cgg ggc cgg tcc	6478
Gly Cys Arg Arg Glu Arg Glu Arg Arg Gln Glu Arg Gly Arg Ser	
2100 2105 2110	
cag gag cgg agg cag ccc tca tcc tcc tcc tcg gag aag cag cgc	6523
Gln Glu Arg Arg Gln Pro Ser Ser Ser Ser Ser Glu Lys Gln Arg	
2115 2120 2125	
ttc tac tcc tgc gac cgc ttt ggg ggc cgt gag ccc ccg aag ccc	6568
Phe Tyr Ser Cys Asp Arg Phe Gly Gly Arg Glu Pro Pro Lys Pro	
2130 2135 2140	
aag ccc tcc ctc agc agc cac cca acg tcg cca aca gct ggc cag	6613
Lys Pro Ser Leu Ser Ser His Pro Thr Ser Pro Thr Ala Gly Gln	
2145 2150 2155	
gag ccg gga ccc cac cca cag gcc ggc tca gcc gtg ggc ttt ccg	6658
Glu Pro Gly Pro His Pro Gln Ala Gly Ser Ala Val Gly Phe Pro	
2160 2165 2170	
aac aca acg ccc tgc tgc aga gag acc ccc tca gcc agc ccc tgg	6703
Asn Thr Thr Pro Cys Cys Arg Glu Thr Pro Ser Ala Ser Pro Trp	
2175 2180 2185	
ccc ctg gct ctc gaa ttg gct ctg acc ctt acc tgg ggc agc gtc	6748
Pro Leu Ala Leu Glu Leu Ala Leu Thr Leu Thr Trp Gly Ser Val	
2190 2195 2200	
tgg aca gtg agg cct ctg tcc acg ccc tgc ctg agg aca cgc tca	6793
Trp Thr Val Arg Pro Leu Ser Thr Pro Cys Leu Arg Thr Arg Ser	
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Leu Ser Arg Arg Leu Trp Pro Pro Thr Arg Ala Ala Pro Pro Gly	
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Leu Pro Thr Cys Pro Pro	
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35 40 45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
50 55 60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65 70 75 80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
85 90 95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
100 105 110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
115 120 125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
130 135 140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145 150 155 160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
165 170 175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
180 185 190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
195 200 205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
210 215 220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225 230 235 240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
245 250 255

Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
260 265 270

Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
275 280 285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
290 295 300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305 310 315 320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
325 330 335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
340 345 350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
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Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
370 375 380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
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Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
405 410 415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
420 425 430

Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
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Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
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Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
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Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
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Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Arg Arg Leu Thr Thr
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Thr Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
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Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
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Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Val Phe Glu
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Val Val Trp Ala Ala Ile Lys Pro Gly Ser Ser Phe Gly Ile Ser Val
565 570 575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
580 585 590

Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
595 600 605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
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Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625 630 635 640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val

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Ala Arg Glu Glu Arg Pro Arg Pro His Arg Ser His Ser Lys Glu Ala
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Ala Gly Pro Pro Glu Ala Arg Ser Glu Arg Gly Arg Gly Pro Gly Pro
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Glu Gly Gly Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Ala
915 920 925

Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His Gln Asp Pro Ser
930 935 940

Lys Glu Cys Ala Gly Ala Lys Gly Glu Arg Arg Ala Arg His Arg Gly
945 950 955 960

Gly Pro Arg Ala Gly Pro Arg Glu Ala Glu Ser Gly Glu Glu Pro Ala
965 970 975

Arg Arg His Arg Ala Arg His Lys Ala Gln Pro Ala His Glu Ala Val
980 985 990

Glu Lys Glu Thr Thr Glu Lys Glu Ala Thr Glu Lys Glu Ala Glu Ile
995 1000 1005

Val Glu Ala Asp Lys Glu Lys Glu Leu Arg Asn His Gln Pro Arg
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Glu Pro His Cys Asp Leu Glu Thr Ser Gly Thr Val Thr Val Gly
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Pro Met His Thr Leu Pro Ser Thr Cys Leu Gln Lys Val Glu Glu
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Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn Val Thr Arg Met Gly
1055 1060 1065

Ser Gln Pro Pro Asp Pro Asn Thr Ile Val His Ile Pro Val Met
1070 1075 1080

Leu Thr Gly Pro Leu Gly Glu Ala Thr Val Val Pro Ser Gly Asn
1085 1090 1095

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Ser	Met	Phe	Cys	Leu	Ser	Pro	Thr	Asn	Leu	Leu	Arg	Arg	Phe	Cys
1130						1135					1140			
His	Tyr	Ile	Val	Thr	Met	Arg	Tyr	Phe	Glu	Val	Val	Ile	Leu	Val
1145						1150					1155			
Val	Ile	Ala	Leu	Ser	Ser	Ile	Ala	Leu	Ala	Ala	Glu	Asp	Pro	Val
1160						1165					1170			
Arg	Thr	Asp	Ser	Pro	Arg	Asn	Asn	Ala	Leu	Lys	Tyr	Leu	Asp	Tyr
1175						1180					1185			
Ile	Phe	Thr	Gly	Val	Phe	Thr	Phe	Glu	Met	Val	Ile	Lys	Met	Ile
1190						1195					1200			
Asp	Leu	Gly	Leu	Leu	Leu	His	Pro	Gly	Ala	Tyr	Phe	Arg	Asp	Leu
1205						1210					1215			
Trp	Asn	Ile	Leu	Asp	Phe	Ile	Val	Val	Ser	Gly	Ala	Leu	Val	Ala
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Gly Gln Tyr Leu Asp Tyr Glu Lys Glu Glu Val Glu Ala Gln Pro
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Arg Gln Trp Lys Lys Tyr Asp Phe His Tyr Asp Asn Val Leu Trp
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Ala Leu Leu Thr Leu Phe Thr Val Ser Thr Gly Glu Gly Trp Pro
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Met Val Leu Lys His Ser Val Asp Ala Thr Tyr Glu Glu Gln Gly
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Pro Ser Pro Gly Tyr Arg Met Glu Leu Ser Ile Phe Tyr Val Val
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Tyr Phe Val Val Phe Pro Phe Phe Phe Val Asn Ile Phe Val Ala
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Leu Ile Ile Ile Thr Phe Gln Glu Gln Gly Asp Lys Val Met Ser
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Glu Cys Ser Leu Glu Lys Asn Glu Arg Ala Cys Ile Asp Phe Ala
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Ile Ser Ala Lys Pro Leu Thr Arg Tyr Met Pro Gln Asn Arg Gln
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Ser Phe Gln Tyr Lys Thr Trp Thr Phe Val Val Ser Pro Pro Phe
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Glu Tyr Phe Ile Met Ala Met Ile Ala Leu Asn Thr Val Val Leu
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Met Met Lys Phe Tyr Asp Ala Pro Tyr Glu Tyr Glu Leu Met Leu
1490 1495 1500

Lys Cys Leu Asn Ile Val Phe Thr Ser Met Phe Ser Met Glu Cys
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Val Leu Lys Ile Ile Ala Phe Gly Val Leu Asn Tyr Phe Arg Asp

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Asp Ile Leu Val Thr Glu Ile Ala Glu Thr Asn Asn Phe Ile Asn				
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Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu Ile Lys Leu				
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Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp Thr Phe Val				
1580		1585		1590
Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu Ile Ala Met				
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Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val Phe Gly Asn				
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Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu Ser Asn Gln				
1655		1660		1665
Ala Cys Asp Glu Gln Ala Asn Ala Thr Glu Cys Gly Ser Asp Phe				
1670		1675		1680
Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu				
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Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr				
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Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu				
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Phe Ile Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys Gly Arg				
1730		1735		1740

Ile Ser Tyr Asn Asp Met Phe Glu Met Leu Lys His Met Ser Pro
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Pro Leu Gly Leu Gly Lys Lys Cys Pro Ala Arg Val Ala Tyr Lys
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Arg Leu Val Arg Met Asn Met Pro Ile Ser Asn Glu Asp Met Thr
1775 1780 1785

Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg Thr Ala Leu
1790 1795 1800

Glu Ile Lys Leu Ala Pro Ala Gly Thr Lys Gln His Gln Cys Asp
1805 1810 1815

Ala Glu Leu Arg Lys Glu Ile Ser Val Val Trp Ala Asn Leu Pro
1820 1825 1830

Gln Lys Thr Leu Asp Leu Leu Val Pro Pro His Lys Pro Asp Glu
1835 1840 1845

Met Thr Val Gly Lys Val Tyr Ala Ala Leu Met Ile Phe Asp Phe
1850 1855 1860

Tyr Lys Gln Asn Lys Thr Thr Arg Asp Gln Met Gln Gln Ala Pro
1865 1870 1875

Gly Gly Leu Ser Gln Met Gly Pro Val Ser Leu Phe His Pro Leu
1880 1885 1890

Lys Ala Thr Leu Glu Gln Thr Gln Pro Ala Val Leu Arg Gly Ala
1895 1900 1905

Arg Val Phe Leu Arg Gln Lys Ser Ser Thr Ser Leu Ser Asn Gly
1910 1915 1920

Gly Ala Ile Gln Asn Gln Glu Ser Gly Ile Lys Glu Ser Val Ser
1925 1930 1935

Trp Gly Thr Gln Arg Thr Gln Asp Ala Pro His Glu Ala Arg Pro
1940 1945 1950

Pro 1955	Leu	Glu	Arg	Gly	His	Ser 1960	Thr	Glu	Ile	Pro	Val 1965	Gly	Arg	Ser
Gly 1970	Ala	Leu	Ala	Val	Asp	Val 1975	Gln	Met	Gln	Ser	Ile 1980	Thr	Arg	Arg
Gly 1985	Pro	Asp	Gly	Glu	Pro	Gln 1990	Pro	Gly	Leu	Glu	Ser 1995	Gln	Gly	Arg
Ala 2000	Ala	Ser	Met	Pro	Arg	Leu 2005	Ala	Ala	Glu	Thr	Gln 2010	Pro	Val	Thr
Asp 2015	Ala	Ser	Pro	Met	Lys	Arg 2020	Ser	Ile	Ser	Thr	Leu 2025	Ala	Gln	Arg
Pro 2030	Arg	Gly	Thr	His	Leu	Cys 2035	Ser	Thr	Thr	Pro	Asp 2040	Arg	Pro	Pro
Pro 2045	Ser	Gln	Ala	Ser	Ser	His 2050	His	His	His	His	Arg 2055	Cys	His	Arg
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Arg 2105	Arg	Gln	Glu	Arg	Gly	Arg 2110	Ser	Gln	Glu	Arg	Arg 2115	Gln	Pro	Ser
Ser 2120	Ser	Ser	Ser	Glu	Lys	Gln 2125	Arg	Phe	Tyr	Ser	Cys 2130	Asp	Arg	Phe
Gly 2135	Gly	Arg	Glu	Pro	Pro	Lys 2140	Pro	Lys	Pro	Ser	Leu 2145	Ser	Ser	His
Pro 2150	Thr	Ser	Pro	Thr	Ala	Gly 2155	Gln	Glu	Pro	Gly	Pro 2160	His	Pro	Gln

Ala Gly Ser Ala Val Gly Phe Pro Asn Thr Thr Pro Cys Cys Arg
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Glu Thr Pro Ser Ala Ser Pro Trp Pro Leu Ala Leu Glu Leu Ala
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1385	1390	1395	
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1400	1405	1410	
gaa cag gga gat aag gtg Glu Gln Gly Asp Lys Val	atg tct gaa tgc agc Met Ser Glu Cys Ser	tta gaa aag aat Leu Glu Lys Asn	4284
1415	1420	1425	
gag agg gct tgc att gat Glu Arg Ala Cys Ile Asp	ttt gcc atc agt gcc Phe Ala Ile Ser Ala	aag ccc ctg aca Lys Pro Leu Thr	4329
1430	1435	1440	
cgg tac atg cct caa aac Arg Tyr Met Pro Gln Asn	aaa cag tgc ttc cag Lys Gln Ser Phe Gln	tat aag aca tgg Tyr Lys Thr Trp	4374
1445	1450	1455	
aca ttc gtg gtc tct cca Thr Phe Val Val Ser Pro	ccc ttt gag tac ttc Pro Phe Glu Tyr Phe	atc atg gct atg Ile Met Ala Met	4419
1460	1465	1470	
ata gcc ctg aac aca gtg Ile Ala Leu Asn Thr Val	gtg ctg atg atg aag Val Leu Met Met Lys	ttc tat gat gca Phe Tyr Asp Ala	4464
1475	1480	1485	
cct tat gag tac gag ctg Pro Tyr Glu Tyr Glu Leu	atg ctg aaa tgc ctg Met Leu Lys Cys Leu	aac att gtc ttc Asn Ile Val Phe	4509
1490	1495	1500	
aca tcc atg ttc tgc atg Thr Ser Met Phe Ser Met	gag tgc ata ctg aag Glu Cys Ile Leu Lys	atc atc gcc ttt Ile Ile Ala Phe	4554
1505	1510	1515	
ggg gta ttg aac tac ttc Gly Val Leu Asn Tyr Phe	aga gat gcc tgg aac Arg Asp Ala Trp Asn	gtc ttt gac ttt Val Phe Asp Phe	4599
1520	1525	1530	

gtc	acg	gtt	ttg	gga	agt	att	act	gat	att	tta	gta	aca	gag	ata	4644
Val	Thr	Val	Leu	Gly	Ser	Ile	Thr	Asp	Ile	Leu	Val	Thr	Glu	Ile	
1535						1540					1545				
gcg	aac	aac	ttc	atc	aac	cta	agc	ttc	ctt	cgc	ctc	ttc	cgg	gcg	4689
Ala	Asn	Asn	Phe	Ile	Asn	Leu	Ser	Phe	Leu	Arg	Leu	Phe	Arg	Ala	
1550						1555					1560				
gca	cgg	ctg	atc	aag	ctg	ctt	cgc	cag	ggc	tac	acc	atc	cgc	atc	4734
Ala	Arg	Leu	Ile	Lys	Leu	Leu	Arg	Gln	Gly	Tyr	Thr	Ile	Arg	Ile	
1565						1570					1575				
cta	ttg	tgg	acc	ttc	gtc	cag	tcc	ttt	aag	gcg	ctg	ccc	tac	gtg	4779
Leu	Leu	Trp	Thr	Phe	Val	Gln	Ser	Phe	Lys	Ala	Leu	Pro	Tyr	Val	
1580						1585					1590				
tgc	ctc	ctc	att	gcc	atg	ctg	ttc	ttc	atc	tac	gcc	atc	atc	gga	4824
Cys	Leu	Leu	Ile	Ala	Met	Leu	Phe	Phe	Ile	Tyr	Ala	Ile	Ile	Gly	
1595						1600					1605				
atg	cag	gtt	ttt	gga	aac	att	gcc	ctt	gat	gat	gac	acc	agt	atc	4869
Met	Gln	Val	Phe	Gly	Asn	Ile	Ala	Leu	Asp	Asp	Asp	Thr	Ser	Ile	
1610						1615					1620				
aac	cga	cac	aac	aac	ttc	cgg	aca	ttt	ctg	caa	gcc	tta	atg	cta	4914
Asn	Arg	His	Asn	Asn	Phe	Arg	Thr	Phe	Leu	Gln	Ala	Leu	Met	Leu	
1625						1630					1635				
ttg	ttc	agg	agt	gcc	act	ggg	gag	gcc	tgg	cat	gag	atc	atg	ctg	4959
Leu	Phe	Arg	Ser	Ala	Thr	Gly	Glu	Ala	Trp	His	Glu	Ile	Met	Leu	
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tct	tgt	ctg	ggc	aac	cgg	gcc	tgt	gac	cca	cat	gcc	aac	gcc	agt	5004
Ser	Cys	Leu	Gly	Asn	Arg	Ala	Cys	Asp	Pro	His	Ala	Asn	Ala	Ser	
1655						1660					1665				
gag	tgc	ggg	agc	gac	ttt	gcc	tat	ttt	tat	ttt	gtc	tcc	ttc	atc	5049
Glu	Cys	Gly	Ser	Asp	Phe	Ala	Tyr	Phe	Tyr	Phe	Val	Ser	Phe	Ile	
1670						1675					1680				
ttc	ctc	tgt	tcc	ttt	ctg	atg	ttg	aac	ctc	ttt	gtt	gct	gta	atc	5094
Phe	Leu	Cys	Ser	Phe	Leu	Met	Leu	Asn	Leu	Phe	Val	Ala	Val	Ile	
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atg	gac	aat	ttt	gag	tac	ctc	act	cgg	gac	tct	tcc	atc	cta	ggg	5139
Met	Asp	Asn	Phe	Glu	Tyr	Leu	Thr	Arg	Asp	Ser	Ser	Ile	Leu	Gly	
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cct	cac	cac	tta	gac	gaa	ttc	att	cga	gtc	tgg	gct	gaa	tac	gac	5184
Pro	His	His	Leu	Asp	Glu	Phe	Ile	Arg	Val	Trp	Ala	Glu	Tyr	Asp	
1715						1720					1725				
cca	gct	gcg	tgt	ggg	cgc	atc	agt	tac	aat	gac	atg	ttt	gag	atg	5229
Pro	Ala	Ala	Cys	Gly	Arg	Ile	Ser	Tyr	Asn	Asp	Met	Phe	Glu	Met	
1730						1735					1740				

ctg	aaa	cac	atg	tcc	cca	cct	ctg	ggg	ttg	ggg	aag	aaa	tgc	ccg	5274
Leu	Lys	His	Met	Ser	Pro	Pro	Leu	Gly	Leu	Gly	Lys	Lys	Cys	Pro	
	1745					1750					1755				
gct	cga	gtt	gca	tac	aag	cgc	ctg	gtt	cgc	atg	aac	atg	ccc	ata	5319
Ala	Arg	Val	Ala	Tyr	Lys	Arg	Leu	Val	Arg	Met	Asn	Met	Pro	Ile	
	1760					1765					1770				
tcc	aat	gag	gac	atg	acg	gtg	cac	ttt	acg	tcc	aca	ctg	atg	gcc	5364
Ser	Asn	Glu	Asp	Met	Thr	Val	His	Phe	Thr	Ser	Thr	Leu	Met	Ala	
	1775					1780					1785				
ctc	atc	cgg	aca	gca	ctg	gag	atc	aag	ctt	gcc	cca	gcg	ggg	acg	5409
Leu	Ile	Arg	Thr	Ala	Leu	Glu	Ile	Lys	Leu	Ala	Pro	Ala	Gly	Thr	
	1790					1795					1800				
aag	cag	cac	cag	tgt	gat	gct	gag	ctg	aga	aaa	gag	atc	tct	tct	5454
Lys	Gln	His	Gln	Cys	Asp	Ala	Glu	Leu	Arg	Lys	Glu	Ile	Ser	Ser	
	1805					1810					1815				
gtg	tgg	gct	aat	ctg	ccc	cag	aag	act	ctg	gac	tta	ctg	gta	cca	5499
Val	Trp	Ala	Asn	Leu	Pro	Gln	Lys	Thr	Leu	Asp	Leu	Leu	Val	Pro	
	1820					1825					1830				
ccc	cac	aaa	cct	gac	gag	atg	aca	gtg	ggg	aag	gtc	tat	gct	gct	5544
Pro	His	Lys	Pro	Asp	Glu	Met	Thr	Val	Gly	Lys	Val	Tyr	Ala	Ala	
	1835					1840					1845				
ctc	atg	ata	ttt	gac	ttc	tac	aaa	cag	aac	aaa	acc	acc	aga	gat	5589
Leu	Met	Ile	Phe	Asp	Phe	Tyr	Lys	Gln	Asn	Lys	Thr	Thr	Arg	Asp	
	1850					1855					1860				
cag	act	cac	caa	gct	ccc	gga	ggc	ctg	tcc	cag	atg	ggg	ccc	gtt	5634
Gln	Thr	His	Gln	Ala	Pro	Gly	Gly	Leu	Ser	Gln	Met	Gly	Pro	Val	
	1865					1870					1875				
tcc	ctg	ttc	cac	cct	ctg	aag	gcc	acc	ctg	gaa	cag	aca	cag	ccc	5679
Ser	Leu	Phe	His	Pro	Leu	Lys	Ala	Thr	Leu	Glu	Gln	Thr	Gln	Pro	
	1880					1885					1890				
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Ala	Val	Leu	Arg	Gly	Ala	Arg	Val	Phe	Leu	Arg	Gln	Lys	Ser	Ala	
	1895					1900					1905				
act	tcc	ctc	agc	aat	ggg	ggg	gcc	ata	caa	acc	cag	gaa	agt	ggc	5769
Thr	Ser	Leu	Ser	Asn	Gly	Gly	Ala	Ile	Gln	Thr	Gln	Glu	Ser	Gly	
	1910					1915					1920				
atc	aag	gag	tcg	ctg	tcc	tgg	ggc	acg	cag	agg	acc	caa	gat	gca	5814
Ile	Lys	Glu	Ser	Leu	Ser	Trp	Gly	Thr	Gln	Arg	Thr	Gln	Asp	Ala	
	1925					1930					1935				
ctt	tat	gag	gcc	aga	gca	cct	cta	gaa	cgt	ggc	cat	tct	gca	gag	5859
Leu	Tyr	Glu	Ala	Arg	Ala	Pro	Leu	Glu	Arg	Gly	His	Ser	Ala	Glu	
	1940					1945					1950				
atc	cct	gtg	ggg	cag	tca	gga	aca	ctg	gct	gtg	gat	gtc	cag	atg	5904

Ile	Pro	Val	Gly	Gln	Ser	Gly	Thr	Leu	Ala	Val	Asp	Val	Gln	Met	
1955						1960					1965				
cag	aac	atg	aca	ctg	aga	gga	cca	gat	ggg	gag	ccc	cag	cct	ggg	5949
Gln	Asn	Met	Thr	Leu	Arg	Gly	Pro	Asp	Gly	Glu	Pro	Gln	Pro	Gly	
1970						1975					1980				
ctg	gaa	agc	caa	ggc	aga	gct	gcc	tct	atg	cca	cgc	cta	gcg	gca	5994
Leu	Glu	Ser	Gln	Gly	Arg	Ala	Ala	Ser	Met	Pro	Arg	Leu	Ala	Ala	
1985						1990					1995				
gaa	aca	cag	ccg	gcc	cct	aat	gcc	agc	ccc	atg	aag	cgc	tcc	atc	6039
Glu	Thr	Gln	Pro	Ala	Pro	Asn	Ala	Ser	Pro	Met	Lys	Arg	Ser	Ile	
2000						2005					2010				
tcc	aca	ctg	gct	cca	cgc	cca	cat	ggg	act	cag	ctt	tgc	agc	aca	6084
Ser	Thr	Leu	Ala	Pro	Arg	Pro	His	Gly	Thr	Gln	Leu	Cys	Ser	Thr	
2015						2020					2025				
gtt	ctg	gac	cgg	cct	cct	cct	agc	cag	gca	tca	cat	cac	cac	cac	6129
Val	Leu	Asp	Arg	Pro	Pro	Pro	Ser	Gln	Ala	Ser	His	His	His	His	
2030						2035					2040				
cac	cgc	tgc	cac	cgg	cgc	aga	gac	aag	aag	caa	agg	tcc	ctg	gaa	6174
His	Arg	Cys	His	Arg	Arg	Arg	Asp	Lys	Lys	Gln	Arg	Ser	Leu	Glu	
2045						2050					2055				
aag	ggg	ccc	agc	ctg	tct	gtt	gac	cca	gaa	ggg	gca	cca	agc	act	6219
Lys	Gly	Pro	Ser	Leu	Ser	Val	Asp	Pro	Glu	Gly	Ala	Pro	Ser	Thr	
2060						2065					2070				
gct	gca	gga	cct	ggg	ctg	ccc	cat	gga	gaa	gga	tcc	acc	gcc	tgc	6264
Ala	Ala	Gly	Pro	Gly	Leu	Pro	His	Gly	Glu	Gly	Ser	Thr	Ala	Cys	
2075						2080					2085				
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Arg	Arg	Asp	Arg	Lys	Gln	Glu	Arg	Gly	Arg	Ser	Gln	Glu	Arg	Arg	
2090						2095					2100				
cag	ccc	tca	tct	tcc	tct	tca	gag	aag	cag	cgc	ttc	tat	tcc	tgt	6354
Gln	Pro	Ser	Ser	Ser	Ser	Ser	Glu	Lys	Gln	Arg	Phe	Tyr	Ser	Cys	
2105						2110					2115				
gac	cgc	ttt	ggg	agc	cgg	gag	ccc	ccg	caa	ctg	atg	ccc	tca	ctc	6399
Asp	Arg	Phe	Gly	Ser	Arg	Glu	Pro	Pro	Gln	Leu	Met	Pro	Ser	Leu	
2120						2125					2130				
agt	agc	cac	ccc	aca	tcg	cca	aca	gcg	gcg	cta	gag	cca	gca	ccc	6444
Ser	Ser	His	Pro	Thr	Ser	Pro	Thr	Ala	Ala	Leu	Glu	Pro	Ala	Pro	
2135						2140					2145				
cac	cca	cag	ggc	agt	ggg	tcc	gtt	aat	ggg	agc	ccc	ttg	atg	tca	6489
His	Pro	Gln	Gly	Ser	Gly	Ser	Val	Asn	Gly	Ser	Pro	Leu	Met	Ser	
2150						2155					2160				
aca	tcc	ggg	gct	agc	acc	ccg	ggc	cga	ggg	ggg	cgg	agg	cag	ctc	6534
Thr	Ser	Gly	Ala	Ser	Thr	Pro	Gly	Arg	Gly	Gly	Arg	Arg	Gln	Leu	

2165	2170	2175	
ccc cag act cct ctg acc Pro Gln Thr Pro Leu Thr 2180	cca cgc ccc agc atc acc Pro Arg Pro Ser Ile Thr 2185	acc tac aag acc Thr Tyr Lys Thr 2190	6579
gcc aat tcc tcg cct gtc Ala Asn Ser Ser Pro Val 2195	cac ttt gct gag ggt His Phe Ala Glu Gly 2200	cag agc ggc ctc Gln Ser Gly Leu 2205	6624
cca gcc ttc tcc cct ggc Pro Ala Phe Ser Pro Gly 2210	cgt ctc agc cgc ggc Arg Leu Ser Arg Gly 2215	ctt tct gaa cac Leu Ser Glu His 2220	6669
aat gcc ctg ctc cag aaa Asn Ala Leu Leu Gln Lys 2225	gag ccc ctg agc cag Glu Pro Leu Ser Gln 2230	cct cta gct cct Pro Leu Ala Pro 2235	6714
ggc tcc cga att ggc tct Gly Ser Arg Ile Gly Ser 2240	gac cct tac cta ggg Asp Pro Tyr Leu Gly 2245	cag cgt ctg gac Gln Arg Leu Asp 2250	6759
agt gag gcc tcc gcc cac Ser Glu Ala Ser Ala His 2255	acc ctg cct gag gat Thr Leu Pro Glu Asp 2260	aca ctc acc ttt Thr Leu Thr Phe 2265	6804
gaa gag gca gtg gcc acc Glu Glu Ala Val Ala Thr 2270	aac tct ggc cgc tcc Asn Ser Gly Arg Ser 2275	tcc agg act tcc Ser Arg Thr Ser 2280	6849
tat gtg tcc tcc ctc act Tyr Val Ser Ser Leu Thr 2285	tcc caa tcc cac cct Ser Gln Ser His Pro 2290	ctc cgc cgt gta Leu Arg Arg Val 2295	6894
ccc aat ggc tat cac tgc Pro Asn Gly Tyr His Cys 2300	act ttg gga ctc agc Thr Leu Gly Leu Ser 2305	act ggc gtc cgg Thr Gly Val Arg 2310	6939
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 <212> PRT
 <213> Mus musculus

<400> 38

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Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
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Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
35 40 45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
50 55 60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65 70 75 80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
85 90 95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
100 105 110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
115 120 125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
130 135 140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145 150 155 160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
165 170 175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
180 185 190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
195 200 205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
210 215 220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225 230 235 240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
245 250 255

Ser Thr Asp Thr Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Asp Pro
260 265 270

Pro Ala Arg Gln Cys Asp Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
275 280 285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
290 295 300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305 310 315 320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
325 330 335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
340 345 350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
355 360 365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
370 375 380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385 390 395 400

Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
405 410 415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
420 425 430

Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Val Gly Ser Pro Phe
435 440 445

Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
450 455 460

Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465 470 475 480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr

485					490					495					
Leu	Cys	Val	Ala	Met	Val	His	Tyr	Asn	Gln	Pro	Gln	Arg	Leu	Thr	Thr
			500					505					510		
Ala	Leu	Tyr	Phe	Ala	Glu	Phe	Val	Phe	Leu	Gly	Leu	Phe	Leu	Thr	Glu
		515					520					525			
Met	Ser	Leu	Lys	Met	Tyr	Gly	Leu	Gly	Pro	Arg	Ser	Tyr	Phe	Arg	Ser
	530					535					540				
Ser	Phe	Asn	Cys	Phe	Asp	Phe	Gly	Val	Ile	Val	Gly	Ser	Ile	Phe	Glu
545					550					555					560
Val	Val	Trp	Ala	Ala	Ile	Lys	Pro	Gly	Thr	Ser	Phe	Gly	Ile	Ser	Val
			565						570					575	
Leu	Arg	Ala	Leu	Arg	Leu	Leu	Arg	Ile	Phe	Lys	Val	Thr	Lys	Tyr	Trp
		580						585					590		
Asn	Ser	Leu	Arg	Asn	Leu	Val	Val	Ser	Leu	Leu	Asn	Ser	Met	Lys	Ser
		595					600					605			
Ile	Ile	Ser	Leu	Leu	Phe	Leu	Leu	Phe	Leu	Phe	Ile	Val	Val	Phe	Ala
	610					615					620				
Leu	Leu	Gly	Met	Gln	Leu	Phe	Gly	Gly	Gln	Phe	Asn	Phe	Gln	Asp	Glu
625					630					635					640
Thr	Pro	Thr	Thr	Asn	Phe	Asp	Thr	Phe	Pro	Ala	Ala	Ile	Leu	Thr	Val
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Phe	Gln	Ile	Leu	Thr	Gly	Glu	Asp	Trp	Asn	Ala	Val	Met	Tyr	His	Gly
			660					665					670		
Ile	Glu	Ser	Gln	Gly	Gly	Val	Ser	Lys	Gly	Met	Phe	Ser	Ser	Phe	Tyr
		675					680					685			
Phe	Ile	Val	Leu	Thr	Leu	Phe	Gly	Asn	Tyr	Thr	Leu	Leu	Asn	Val	Phe
	690					695					700				
Leu	Ala	Ile	Ala	Val	Asp	Asn	Leu	Ala	Asn	Ala	Gln	Glu	Leu	Thr	Lys
705					710				715						720

Asp	Glu	Glu	Glu	Met	Glu	Glu	Ala	Ala	Asn	Gln	Lys	Leu	Ala	Leu	Gln	725	730	735	
Lys	Ala	Lys	Glu	Val	Ala	Glu	Val	Ser	Pro	Met	Ser	Ala	Ala	Asn	Ile	740	745	750	
Ser	Ile	Ala	Ala	Arg	Gln	Gln	Asn	Ser	Ala	Lys	Ala	Arg	Ser	Val	Trp	755	760	765	
Glu	Gln	Arg	Ala	Ser	Gln	Leu	Arg	Leu	Gln	Asn	Leu	Arg	Ala	Ser	Cys	770	775	780	
Glu	Ala	Leu	Tyr	Ser	Glu	Met	Asp	Pro	Glu	Glu	Arg	Leu	Arg	Tyr	Ala	785	790	795	800
Ser	Thr	Arg	His	Val	Arg	Pro	Asp	Met	Lys	Thr	His	Met	Asp	Arg	Pro	805	810	815	
Leu	Val	Val	Glu	Pro	Gly	Arg	Asp	Gly	Leu	Arg	Gly	Pro	Val	Gly	Ser	820	825	830	
Lys	Ser	Lys	Pro	Glu	Gly	Thr	Glu	Ala	Thr	Glu	Ser	Ala	Asp	Leu	Pro	835	840	845	
Arg	Arg	His	His	Arg	His	Arg	Asp	Arg	Asp	Lys	Thr	Ser	Ala	Thr	Ala	850	855	860	
Pro	Ala	Gly	Gly	Glu	Gln	Asp	Arg	Thr	Glu	Ser	Thr	Glu	Thr	Gly	Ala	865	870	875	880
Arg	Glu	Glu	Arg	Ala	Arg	Pro	Arg	Arg	Ser	His	Ser	Lys	Glu	Thr	Pro	885	890	895	
Gly	Ala	Asp	Thr	Gln	Val	Arg	Cys	Glu	Arg	Ser	Arg	Arg	His	His	Arg	900	905	910	
Arg	Gly	Ser	Pro	Glu	Glu	Ala	Thr	Glu	Arg	Glu	Pro	Arg	Arg	His	Arg	915	920	925	
Ala	His	Arg	His	Ala	Gln	Asp	Ser	Ser	Lys	Glu	Gly	Thr	Ala	Pro	Val	930	935	940	

Leu Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg Thr
945 950 955 960

Gly Pro Arg Glu Ala Glu Asn Asn Glu Glu Pro Thr Arg Arg His Arg
965 970 975

Ala Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala
980 985 990

Ala Glu Lys Glu Ser Asn Ala Val Glu Gly Asp Lys Glu Thr Arg Asn
995 1000 1005

His Gln Pro Lys Glu Pro His Cys Asp Leu Glu Ala Ile Ala Val
1010 1015 1020

Thr Gly Val Gly Pro Leu His Met Leu Pro Ser Thr Cys Leu Gln
1025 1030 1035

Lys Val Asp Glu Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn Val
1040 1045 1050

Thr Arg Met Gly Ser Gln Pro Ser Asp Pro Ser Thr Thr Val His
1055 1060 1065

Val Pro Val Thr Leu Thr Gly Pro Pro Gly Glu Thr Pro Val Val
1070 1075 1080

Pro Ser Gly Asn Met Asn Leu Glu Gly Gln Ala Glu Gly Lys Lys
1085 1090 1095

Glu Ala Glu Ala Asp Asp Val Leu Arg Arg Gly Pro Arg Pro Ile
1100 1105 1110

Val Pro Tyr Ser Ser Met Phe Cys Leu Ser Pro Thr Asn Leu Leu
1115 1120 1125

Arg Arg Phe Cys His Tyr Ile Val Thr Met Arg Tyr Phe Glu Met
1130 1135 1140

Val Ile Leu Val Val Ile Ala Leu Ser Ser Ile Ala Leu Ala Ala
1145 1150 1155

Glu Asp	Pro Val Arg Thr	Asp Ser Phe Arg Asn Asn	Ala Leu Lys
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Tyr Met	Asp Tyr Ile Phe Thr	Gly Val Phe Thr Phe	Glu Met Val
1175		1180	1185
Ile Lys	Met Ile Asp Leu Gly	Leu Leu Leu His Pro	Gly Ala Tyr
1190		1195	1200
Phe Arg	Asp Leu Trp Asn Ile	Leu Asp Phe Ile Val	Val Ser Gly
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Val Gln	Leu Phe Lys Gly Lys	Phe Phe Tyr Cys Thr	Asp Glu Ser
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Phe His	Tyr Asp Asn Val Leu	Trp Ala Leu Leu Thr	Leu Phe Thr
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Val Ser	Thr Gly Glu Gly Trp	Pro Met Val Leu Lys	His Ser Val
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Pro Tyr Glu Tyr Glu Leu Met	Leu Lys Cys Leu Asn	Ile Val Phe		
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His	Arg	His	Ala	Gln	Asp	Ser	Ser	Lys	Glu	Gly	Thr	Ala	Pro	Val	Leu		
		930				935					940						
gta	ccc	aag	ggc	gag	cga	cga	gca	aga	cac	cga	ggc	cca	cgc	acg	ggc	3000	
Val	Pro	Lys	Gly	Glu	Arg	Arg	Ala	Arg	His	Arg	Gly	Pro	Arg	Thr	Gly		
					950					955					960		
cca	cgt	gag	gca	gag	aac	aac	gag	gag	ccc	aca	cgc	agg	cac	cgt	gca	3048	
Pro	Arg	Glu	Ala	Glu	Asn	Asn	Glu	Glu	Pro	Thr	Arg	Arg	His	Arg	Ala		
				965					970					975			

agg cat aag gtg cca ccc aca ctg cag ccc cca gag agg gag gct gca	3096
Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala Ala	
980 985 990	
 gag aag gag agc aac gcg gtg gaa ggg gat aag gaa acc cga aat cac	3144
Glu Lys Glu Ser Asn Ala Val Glu Gly Asp Lys Glu Thr Arg Asn His	
995 1000 1005	
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Gln Pro Lys Glu Pro His Cys Asp Leu Glu Ala Ile Ala Val Thr	
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Gly Val Gly Pro Leu His Met Leu Pro Ser Thr Cys Leu Gln Lys	
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 gtg gac gag caa cca gag gat gca gac aac cag cgt aat gtc acc	3279
Val Asp Glu Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn Val Thr	
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Arg Met Gly Ser Gln Pro Ser Asp Pro Ser Thr Thr Val His Val	
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Pro Val Thr Leu Thr Gly Pro Pro Gly Glu Thr Pro Val Val Pro	
1070 1075 1080	
 agt ggt aac atg aac ctg gaa ggc caa gca gag ggc aag aag gag	3414
Ser Gly Asn Met Asn Leu Glu Gly Gln Ala Glu Gly Lys Lys Glu	
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 gca gag gcg gat gat gtg ctg aga aga ggc ccc agg ccc atc gtt	3459
Ala Glu Ala Asp Asp Val Leu Arg Arg Gly Pro Arg Pro Ile Val	
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 ccc tac agc tcc atg ttt tgt ctc agc ccc acc aac ctg ttt cgt	3504
Pro Tyr Ser Ser Met Phe Cys Leu Ser Pro Thr Asn Leu Phe Arg	
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Arg Phe Cys His Tyr Ile Val Thr Met Arg Tyr Leu Glu Met Val	
1130 1135 1140	
 att ctt gtg gtc att gcc ttg agc agc att gcc ctg gct gca gag	3594
Ile Leu Val Val Ile Ala Leu Ser Ser Ile Ala Leu Ala Ala Glu	
1145 1150 1155	
 gat cct gtg cgg aca gat tca ttc agg aac aac gct tta gag tac	3639
Asp Pro Val Arg Thr Asp Ser Phe Arg Asn Asn Ala Leu Glu Tyr	
1160 1165 1170	
 atg gat tac atc ttt aca gga gtc ttc acc tgt gaa atg gtc ata	3684
Met Asp Tyr Ile Phe Thr Gly Val Phe Thr Cys Glu Met Val Ile	
1175 1180 1185	

aag atg ata gac ttg ggc ttg ctg ctg cac cct ggt gcc tac ttc	3729
Lys Met Ile Asp Leu Gly Leu Leu Leu His Pro Gly Ala Tyr Phe	
1190 1195 1200	
cgg gac ctg tgg aac att ctg gac ttc atc gtt gtc agt gga gcc	3774
Arg Asp Leu Trp Asn Ile Leu Asp Phe Ile Val Val Ser Gly Ala	
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ctg gtg gca ttt gcg ttc tca gga tcc aaa ggg aaa gac atc aat	3819
Leu Val Ala Phe Ala Phe Ser Gly Ser Lys Gly Lys Asp Ile Asn	
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acc atc aag tct ctg aga gtc ctg cgt gtc ctg agg ccc ctc aag	3864
Thr Ile Lys Ser Leu Arg Val Leu Arg Val Leu Arg Pro Leu Lys	
1235 1240 1245	
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Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val Phe Asp Cys Val	
1250 1255 1260	
gtg aac tcc ctg aag aac gtc ttg aac atc ctg att gtc tac atg	3954
Val Asn Ser Leu Lys Asn Val Leu Asn Ile Leu Ile Val Tyr Met	
1265 1270 1275	
ctc ttc atg ttc ata ttt gcc gtc att gcc gtc cag ctc ttc aaa	3999
Leu Phe Met Phe Ile Phe Ala Val Ile Ala Val Gln Leu Phe Lys	
1280 1285 1290	
ggg aag ttc ttt tac tgt act gat gaa tcc aag gag ctg gag agg	4044
Gly Lys Phe Phe Tyr Cys Thr Asp Glu Ser Lys Glu Leu Glu Arg	
1295 1300 1305	
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Asp Cys Arg Gly Gln Tyr Leu Asp Tyr Glu Lys Glu Glu Val Glu	
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gcc cag cca agg cag tgg aag aaa tat gac ttc cac tat gac aat	4134
Ala Gln Pro Arg Gln Trp Lys Lys Tyr Asp Phe His Tyr Asp Asn	
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gtt ctc tgg gcc ttg ttg acg ctg ttc aca gtg tcc acg gga gag	4179
Val Leu Trp Ala Leu Leu Thr Leu Phe Thr Val Ser Thr Gly Glu	
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Gly Trp Pro Met Val Leu Lys His Ser Val Asp Ala Thr Tyr Glu	
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gaa cag ggg ccc agt ccc ggc ttc cgg atg gag ctc tcc atc ctc	4269
Glu Gln Gly Pro Ser Pro Gly Phe Arg Met Glu Leu Ser Ile Leu	
1370 1375 1380	
tac gtg gtc tac ttt gtg gtc ttc cct ttt ttc ttt gtc aac atc	4314
Tyr Val Val Tyr Phe Val Val Phe Pro Phe Phe Phe Val Asn Ile	
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ttt gtg gcc ttg atc att atc acc ttc cag gaa cag gga gat aag	4359

Phe Val Ala Leu Ile Ile Ile Thr Phe Gln Glu Gln Gly Asp Lys	
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Val Met Ser Glu Cys Ser Leu Glu Lys Asn Glu Arg Ala Cys Ile	
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gat ttt gcc atc agt gcc aag ccc ctg aca cgg tac atg cct caa	4449
Asp Phe Ala Ile Ser Ala Lys Pro Leu Thr Arg Tyr Met Pro Gln	
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Asn Lys Gln Ser Phe Gln Tyr Lys Thr Trp Thr Phe Val Val Ser	
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cca ccc ttt gag tac ttc atc atg gct atg ata gcc ctc aac aca	4539
Pro Pro Phe Glu Tyr Phe Ile Met Ala Met Ile Ala Leu Asn Thr	
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Val Val Leu Met Met Lys Phe Tyr Asp Ala Pro Tyr Glu Tyr Glu	
1475 1480 1485	
ctg atg ctg aaa tgc ctg aac att gtc ttc aca tcc atg ttc tcg	4629
Leu Met Leu Lys Cys Leu Asn Ile Val Phe Thr Ser Met Phe Ser	
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atg gag tgc ata ctg aag atc atc gcc ttt ggg gta ttg aac tac	4674
Met Glu Cys Ile Leu Lys Ile Ile Ala Phe Gly Val Leu Asn Tyr	
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Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val Thr Val Leu Gly	
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agt att act gat att tta gta aca gag att gcg gaa acg aac aac	4764
Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Glu Thr Asn Asn	
1535 1540 1545	
ttc atc aac cta agc ttc ctt cgc ctc ttc cgg gcg gca cgg ctg	4809
Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu	
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atc aag ctg ctt cgc cag ggc tac acc atc cgc atc cta ttg tgg	4854
Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp	
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Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu	
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att gcc atg ctg ttc ttc atc tac gcc atc atc gga atg cag gtt	4944
Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val	
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Phe Gly Asn Ser Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His	

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Asn Asn Phe Arg Thr Phe Leu Gln Ala Ile Met Leu Leu Phe Arg			
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agt gcc act ggg gag gcc tgg cat gag atc atg ctg tca tgt ctg			5079
Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu			
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gac aac cgg gcc tgt gac cca cat gcc aac gcc agt gag tgc ggg			5124
Asp Asn Arg Ala Cys Asp Pro His Ala Asn Ala Ser Glu Cys Gly			
1655	1660	1665	
agc gac ttt gcc tat ttt tat ttt gtc tcc ttc atc ttc ctc tgt			5169
Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys			
1670	1675	1680	
tcc ttt ctg atg ttg aac ctc ttt gtt gct gta atc atg gac aat			5214
Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn			
1685	1690	1695	
ttt gag tac ctc act cgg gac tct tcc atc cta ggg cct cac cac			5259
Phe Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His			
1700	1705	1710	
tta gac gaa ttc att cga gtc tgg gct gaa tac gac cca gct gcg			5304
Leu Asp Glu Phe Ile Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala			
1715	1720	1725	
tgt ggg cgc atc agt tac aat gac atg ttt gag atg ctg aaa cac			5349
Cys Gly Arg Ile Ser Tyr Asn Asp Met Phe Glu Met Leu Lys His			
1730	1735	1740	
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Met Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro Ala Arg Val			
1745	1750	1755	
gca tac aag cgc ctg gtt cgc atg aac atg ccc ata tcc aat gag			5439
Ala Tyr Lys Arg Leu Val Arg Met Asn Met Pro Ile Ser Asn Glu			
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gac atg acg gtg cac ttt acg tcc aca ctg atg gcc ctc atc cgg			5484
Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg			
1775	1780	1785	
aca gca ctg gag atc aag ctt gcc cca gct gac gag atg aca gtg			5529
Thr Ala Leu Glu Ile Lys Leu Ala Pro Ala Asp Glu Met Thr Val			
1790	1795	1800	
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Gly Lys Val Tyr Ala Ala Leu Met Ile Phe Asp Phe Tyr Lys Gln			
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Asn Lys Thr Thr Arg Asp Gln Thr His Gln Ala Pro Gly Gly Leu			
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Leu	Glu	Gln	Thr	Gln	Pro	Ala	Val	Leu	Arg	Gly	Ala	Arg	Val	Phe	
1850						1855					1860				
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1865						1870					1875				
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Gln	Thr	Gln	Glu	Ser	Gly	Ser	Arg	Ser	Arg	Cys	Pro	Gly	Gly	Arg	
1880						1885					1890				
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1895						1900					1905				
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Arg	Asp	His	Ser	Lys	Glu	Ile	Pro	Val	Gly	Gln	Ser	Gly	Thr	Leu	
1910						1915					1920				
ctg	gtg	gat	gtc	cag	atg	cag	aac	atg	aca	ctg	aga	gga	cca	gat	5934
Leu	Val	Asp	Val	Gln	Met	Gln	Asn	Met	Thr	Leu	Arg	Gly	Pro	Asp	
1925						1930					1935				
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Gly	Asp	Pro	Gln	Pro	Gly	Leu	Glu	Ser	Gln	Gly	Arg	Ala	Ala	Ser	
1940						1945					1950				
atg	cta	cgc	cta	gcg	gca	gaa	aca	cag	ccg	gcc	cct	aat	gcc	agc	6024
Met	Leu	Arg	Leu	Ala	Ala	Glu	Thr	Gln	Pro	Ala	Pro	Asn	Ala	Ser	
1955						1960					1965				
ccc	atg	aag	cgc	tcc	atc	tcc	aca	ctg	gct	cca	cgc	cca	gat	ggg	6069
Pro	Met	Lys	Arg	Ser	Ile	Ser	Thr	Leu	Ala	Pro	Arg	Pro	Asp	Gly	
1970						1975					1980				
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Thr	Gln	Leu	Cys	Ser	Thr	Val	Leu	Asp	Arg	Pro	Pro	Pro	Ser	Gln	
1985						1990					1995				
gca	tca	cat	cac	cac	cac	cac	cgc	tgc	cac	cgg	cgc	aga	gac	aag	6159
Ala	Ser	His	His	His	His	His	Arg	Cys	His	Arg	Arg	Arg	Asp	Lys	
2000						2005					2010				
aag	caa	agg	tcc	ctg	gaa	aag	ggg	ccc	agc	ctg	tct	gtt	gac	cca	6204
Lys	Gln	Arg	Ser	Leu	Glu	Lys	Gly	Pro	Ser	Leu	Ser	Val	Asp	Pro	
2015						2020					2025				
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Glu	Gly	Ala	Pro	Ser	Thr	Ala	Ala	Ala	Gly	Pro	Gly	Leu	Pro	His	
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cgc ggc ctt tct gaa cac aat gcc ctg ctc cag aaa gag ccc ctg Arg Gly Leu Ser Glu His Asn Ala Leu Leu Gln Lys Glu Pro Leu 2180 2185 2190	6699
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cta ggg cag cgt ctg gac agt gag gcc tcc gcc cac acc ctg cct Leu Gly Gln Arg Leu Asp Ser Glu Ala Ser Ala His Thr Leu Pro 2210 2215 2220	6789
gag gat aca ctc acc ttt gaa gag gca gtg gcc acc aac tct ggc Glu Asp Thr Leu Thr Phe Glu Glu Ala Val Ala Thr Asn Ser Gly 2225 2230 2235	6834
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cac cct ctc cgc cgt gta ccc aat ggc tat cac tgc act ttg gga	6924

His	Pro	Leu	Arg	Arg	Val	Pro	Asn	Gly	Tyr	His	Cys	Thr	Leu	Gly			
2255						2260					2265						
ctc	aac	act	ggc	gtc	ggg	gca	cga	gca	agc	tac	cac	cac	ccc	gat		6969	
Leu	Asn	Thr	Gly	Val	Gly	Ala	Arg	Ala	Ser	Tyr	His	His	Pro	Asp			
2270						2275					2280						
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Gln	Asp	His	Trp	Cys													
2285																	
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<400> 40

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			20					25						30			
Gly	Gln	Gly	Gly	Leu	Pro	Pro	Gly	Gln	Arg	Val	Leu	Tyr	Lys	Gln	Ser		
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Ile	Ala	Gln	Arg	Ala	Arg	Thr	Met	Ala	Leu	Tyr	Asn	Pro	Ile	Pro	Val		
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Lys	Gln	Asn	Cys	Phe	Thr	Val	Asn	Arg	Ser	Leu	Phe	Val	Phe	Ser	Glu		
65					70					75					80		
Asp	Asn	Val	Val	Arg	Lys	Tyr	Ala	Lys	Arg	Ile	Thr	Glu	Trp	Pro	Pro		
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Phe	Glu	Tyr	Met	Ile	Leu	Ala	Thr	Ile	Ile	Ala	Asn	Cys	Ile	Val	Leu		
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Ala	Leu	Glu	Gln	His	Leu	Pro	Asp	Gly	Asp	Lys	Thr	Pro	Met	Ser	Glu		
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Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
130 135 140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145 150 155 160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
165 170 175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
180 185 190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
195 200 205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
210 215 220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Gly Ile Ile
225 230 235 240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
245 250 255

Ser Thr Asp Thr Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Asp Pro
260 265 270

Pro Ala Arg Gln Cys Asp Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
275 280 285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
290 295 300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305 310 315 320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
325 330 335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
340 345 350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn

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Arg Arg Ala Phe Leu Lys	Leu Arg Arg Gln Gln Gln	Ile Glu Arg Glu
370	375	380
Leu Asn Gly Tyr Leu Glu Trp	Ile Phe Lys Ala Glu Glu	Val Met Leu
385	390	400
Ala Glu Glu Asp Lys Asn Ala	Glu Glu Lys Ser Pro Leu	Asp Val Leu
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Lys Arg Ala Ala Thr Lys Lys	Ser Arg Asn Asp Leu Ile	His Ala Glu
420	425	430
Glu Gly Glu Asp Arg Phe Val	Asp Leu Cys Ala Val Gly	Ser Pro Phe
435	440	445
Ala Arg Ala Ser Leu Lys Ser	Gly Lys Thr Glu Ser Ser	Ser Tyr Phe
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Arg Arg Lys Glu Lys Met Phe	Arg Phe Phe Ile Arg Arg	Met Val Lys
465	470	475
Ala Gln Ser Phe Tyr Trp Val	Val Leu Cys Val Val Ala	Leu Asn Thr
485	490	495
Leu Cys Val Ala Met Val His	Tyr Asn Gln Pro Gln Arg	Leu Thr Thr
500	505	510
Ala Leu Tyr Phe Ala Glu Phe	Val Phe Leu Gly Leu Phe	Leu Thr Glu
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Met Ser Leu Lys Met Tyr Gly	Leu Gly Pro Arg Ser Tyr	Phe Arg Ser
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Ser Phe Asn Cys Phe Asp Phe	Gly Val Ile Val Gly Ser	Ile Phe Glu
545	550	555
Val Val Trp Ala Ala Ile Lys	Pro Gly Thr Ser Phe Gly	Ile Ser Val
565	570	575
Leu Arg Ala Leu Arg Leu Leu	Arg Ile Phe Lys Val Thr	Lys Tyr Trp
580	585	590

Asn	Ser	Leu	Arg	Asn	Leu	Val	Val	Ser	Leu	Leu	Asn	Ser	Met	Lys	Ser
		595					600					605			
Ile	Ile	Ser	Leu	Leu	Phe	Leu	Leu	Phe	Leu	Phe	Ile	Val	Val	Phe	Ala
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Leu	Leu	Gly	Met	Gln	Leu	Phe	Gly	Gly	Gln	Phe	Asn	Phe	Gln	Asp	Glu
625					630					635					640
Thr	Pro	Thr	Thr	Ile	Phe	Asp	Thr	Phe	Pro	Ala	Ala	Ile	Leu	Thr	Val
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Phe	Gln	Ile	Leu	Thr	Gly	Glu	Asp	Trp	Asn	Ala	Val	Met	Tyr	His	Gly
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Ile	Glu	Ser	Gln	Gly	Gly	Val	Ser	Lys	Gly	Met	Phe	Ser	Ser	Phe	Tyr
		675					680					685			
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Thr	Arg	His	Val	Arg	Pro	Asp	Met	Lys	Thr	His	Met	Asp	Arg	Pro	Leu
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Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Val Gly Ser Lys
820 825 830

Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Ser Ala Asp Leu Pro Arg
835 840 845

Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Thr Ala Pro
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Ala Gly Gly Glu Gln Asp Arg Thr Glu Ser Thr Glu Thr Gly Pro Arg
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Glu Glu Arg Ala Arg Pro Arg Arg Ser His Ser Lys Glu Thr Pro Gly
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Ala Asp Thr Gln Val Arg Cys Glu Arg Ser Arg Arg His His Arg Arg
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His Arg His Ala Gln Asp Ser Ser Lys Glu Gly Thr Ala Pro Val Leu
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Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg Thr Gly
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Pro Arg Glu Ala Glu Asn Asn Glu Glu Pro Thr Arg Arg His Arg Ala
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Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala Ala
980 985 990

Glu Lys Glu Ser Asn Ala Val Glu Gly Asp Lys Glu Thr Arg Asn His
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Gln Pro Lys Glu Pro His Cys Asp Leu Glu Ala Ile Ala Val Thr
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Gly Val Gly Pro Leu His Met Leu Pro Ser Thr Cys Leu Gln Lys
1025 1030 1035

Val	Asp	Glu	Gln	Pro	Glu	Asp	Ala	Asp	Asn	Gln	Arg	Asn	Val	Thr	1040	1045	1050
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Pro	Val	Thr	Leu	Thr	Gly	Pro	Pro	Gly	Glu	Thr	Pro	Val	Val	Pro	1070	1075	1080
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Pro	Tyr	Ser	Ser	Met	Phe	Cys	Leu	Ser	Pro	Thr	Asn	Leu	Phe	Arg	1115	1120	1125
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Lys	Met	Ile	Asp	Leu	Gly	Leu	Leu	Leu	His	Pro	Gly	Ala	Tyr	Phe	1190	1195	1200
Arg	Asp	Leu	Trp	Asn	Ile	Leu	Asp	Phe	Ile	Val	Val	Ser	Gly	Ala	1205	1210	1215
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Thr	Ile	Lys	Ser	Leu	Arg	Val	Leu	Arg	Val	Leu	Arg	Pro	Leu	Lys	1235	1240	1245
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Val Asn Ser Leu Lys Asn	Val Leu Asn Ile Leu Ile	Val Tyr Met		
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Leu Phe Met Phe Ile Phe	Ala Val Ile Ala Val	Gln Leu Phe Lys		
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Gly Lys Phe Phe Tyr Cys	Thr Asp Glu Ser Lys	Glu Leu Glu Arg		
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Asp Cys Arg Gly Gln Tyr	Leu Asp Tyr Glu Lys	Glu Glu Val Glu		
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Ala Gln Pro Arg Gln Trp	Lys Lys Tyr Asp Phe	His Tyr Asp Asn		
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Glu Gln Gly Pro Ser Pro	Gly Phe Arg Met Glu	Leu Ser Ile Leu		
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Tyr Val Val Tyr Phe Val	Val Phe Pro Phe Phe	Phe Val Asn Ile		
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Phe Val Ala Leu Ile Ile	Ile Thr Phe Gln Glu	Gln Gly Asp Lys		
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Val Met Ser Glu Cys Ser	Leu Glu Lys Asn Glu	Arg Ala Cys Ile		
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Pro Pro Phe Glu Tyr Phe	Ile Met Ala Met Ile	Ala Leu Asn Thr		
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Lys 2015	Gln	Arg	Ser	Leu	Glu	Lys 2020	Gly	Pro	Ser	Leu	Ser 2025	Val	Asp	Pro
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Lys 2075	Gln	Arg	Phe	Tyr	Ser	Cys 2080	Asp	Arg	Leu	Gly	Ala 2085	Gly	Ser	Pro
Gln 2090	Leu	Met	Pro	Ser	Leu	Ser 2095	Ser	His	Pro	Thr	Ser 2100	Pro	Ala	Ala
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His Pro Leu Arg Arg Val Pro	Asn Gly Tyr His Cys	Thr Leu Gly
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Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Ala Gly
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Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
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Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
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Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
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ttc gag tac atg atc ctg gcc acc atc atc gcc aac tgc atc gtg ctg      456
Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
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gcc ctg gag cag cac ctc cct gac ggg gac aag acg cct atg tcc gag      504
Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
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Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
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Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
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Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
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tcc	atc	atc	agc	ctc	ctc	ttc	ctg	ctc	ttc	ctg	ttc	att	gtt	gtc	ttt	1992	
Ser	Ile	Ile	Ser	Leu	Leu	Phe	Leu	Leu	Phe	Leu	Phe	Ile	Val	Val	Phe		
	610					615					620						
gct	ctg	ctg	ggg	atg	cag	ctg	ttt	gga	ggc	cag	ttc	aac	ttt	aaa	gac	2040	
Ala	Leu	Leu	Gly	Met	Gln	Leu	Phe	Gly	Gly	Gln	Phe	Asn	Phe	Lys	Asp		
625					630					635					640		
gag	acc	cca	acg	acc	aac	ttt	gac	acc	ttc	cct	gct	gct	atc	ctc	acc	2088	
Glu	Thr	Pro	Thr	Thr	Asn	Phe	Asp	Thr	Phe	Pro	Ala	Ala	Ile	Leu	Thr		

			645					650					655						
gtc Val	ttc Phe	cag Gln	atc Ile 660	ctg Leu	acc Thr	gga Gly	gag Glu	gac Asp 665	tgg Trp	aat Asn	gcg Ala	gtc Val	atg Met 670	tac Tyr	cac His	2136			
ggg Gly	atc Ile 675	gag Glu	tcg Ser	caa Gln	ggt Gly	ggc Gly	gtc Val 680	agc Ser	aga Arg	gga Gly	atg Met 685	ttc Phe	tcc Ser	tcc Ser	ttc Phe	2184			
tac Tyr 690	ttc Phe	att Ile	gtc Val	ctc Leu	act Thr	ctg Leu 695	ttt Phe	ggg Gly	aac Asn	tac Tyr	acc Thr 700	ctg Leu	ctg Leu	aat Asn	gtc Val	2232			
ttc Phe 705	ctg Leu	gcc Ala	att Ile	gct Ala	gtg Val 710	gac Asp	aac Asn	ctt Leu	gcc Ala	aat Asn 715	gct Ala	cag Gln	gag Glu	ctg Leu	acc Thr 720	2280			
aag Lys	gat Asp	gaa Glu	gag Glu 725	gag Glu	atg Met	gaa Glu	gaa Glu	gca Ala 730	gcc Ala	aat Asn	cag Gln	aaa Lys	ctc Leu 735	gcc Ala	ttg Leu	2328			
cag Gln	aag Lys	gcc Ala	aag Lys 740	gaa Glu	gtg Val	gct Ala	gaa Glu 745	gtc Val	agc Ser	ccc Pro	atg Met	tct Ser	gct Ala 750	gcg Ala	aac Asn	2376			
atc Ile	tcc Ser 755	att Ile	gcc Ala	gcc Ala	agg Arg	cag Gln 760	cag Gln	aac Asn	tcg Ser	gcc Ala	aaa Lys 765	gcg Ala	cgc Arg	tcg Ser	gtg Val	2424			
tgg Trp 770	gag Glu	cag Gln	cga Arg	gcc Ala	agc Ser	cag Gln 775	ctg Leu	cgg Arg	ctg Leu	cag Gln 780	aac Asn	ctg Leu	agg Arg	gcc Ala	agc Ser	2472			
tgc Cys 785	gag Glu	gcg Ala	ctg Leu	tac Tyr	agc Ser 790	gag Glu	atg Met	gac Asp	ccc Pro	gag Glu 795	gag Glu	agg Arg	ctg Leu	cgc Arg	tac Tyr 800	2520			
gcc Ala	acc Thr	gcg Ala	cgc Arg 805	cac His	ctg Leu	cgg Arg	ccc Pro	gac Asp 810	gtg Val	aag Lys	acg Thr	cac His	ctg Leu 815	gac Asp	cgg Arg	2568			
ccg Pro	ctg Leu	gtg Val 820	gtt Val	gag Glu	ccc Pro	ggc Gly	cgc Arg	gac Asp 825	gct Ala	ccg Pro	cgg Arg	ggc Gly 830	ccc Pro	ccg Pro	ggg Gly	2616			
ggg Gly	aag Lys 835	tcc Ser	cgg Arg	ccg Pro	gat Asp	ggc Gly 840	tcg Ser	gag Glu	gcc Ala	ccc Pro	gag Glu 845	ggt Gly	gcg Ala	gat Asp	ccc Pro	2664			
ccg Pro	cgc Arg 850	agg Arg	cat His	cac His	cgg Arg	cac His 855	cga Arg	gac Asp	aag Lys	gac Asp 860	aag Lys	gct Ala	ccc Pro	gcc Ala	acg Thr	2712			
gtc Val 865	ccc Pro	tcg Ser	gcg Ala	ggg Gly 870	gaa Glu	cag Gln	gac Asp	aga Arg	gcc Ala 875	gaa Glu 875	gct Ala	ctg Leu	agg Arg	gca Ala 880	gag Glu 880	2760			

ggc ggg gag ctg ggg ccc cgc gag gag cgg ggg cgg cca cgc cgc agc Gly Gly Glu Leu Gly Pro Arg Glu Glu Arg Gly Arg Pro Arg Arg Ser 885 890 895	2808
cgc agc aag gag gcc ccg ggc gcc ccg gag gtg cgc agc gat cgc ggc Arg Ser Lys Glu Ala Pro Gly Ala Pro Glu Val Arg Ser Asp Arg Gly 900 905 910	2856
cgt ggc ccg tgt cct gaa ggt ggt cgg cgc cac cac cgg cgc ggg tca Arg Gly Pro Cys Pro Glu Gly Gly Arg Arg His His Arg Arg Gly Ser 915 920 925	2904
ccg gag gag gca gct gag agg gag ccc cgc cgc cac cgc gcg cac cgg Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg 930 935 940	2952
cac ggg ccc gac ccg ggc aag gag ggc cca gcg tcc ggg acc agg ggc His Gly Pro Asp Pro Gly Lys Glu Gly Pro Ala Ser Gly Thr Arg Gly 945 950 955 960	3000
gag cgg cgc gca cga cac cgc acg ggc ccc cgg gcg tgc ccc cgg gag Glu Arg Arg Ala Arg His Arg Thr Gly Pro Arg Ala Cys Pro Arg Glu 965 970 975	3048
gct gag agc agc gag gag cct gcg cgg cgg cac cgg gct cgg cac aag Ala Glu Ser Ser Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys 980 985 990	3096
gcg ccg ccc acc cag gag acc gcg gag aag gac aag gag gct gcc gag Ala Pro Pro Thr Gln Glu Thr Ala Glu Lys Asp Lys Glu Ala Ala Glu 995 1000 1005	3144
aag ggg ggc gag gcc acg gag gcc gag aag gac aag gag gct cgg Lys Gly Gly Glu Ala Thr Glu Ala Glu Lys Asp Lys Glu Ala Arg 1010 1015 1020	3189
aac cac cag ccc aag gag ctg ccc tgt gac ctg gag gcc atc ggc Asn His Gln Pro Lys Glu Leu Pro Cys Asp Leu Glu Ala Ile Gly 1025 1030 1035	3234
atg ctg gga gtg ggc gct gtg cat acg ctg ccc agc acc tgt ctg Met Leu Gly Val Gly Ala Val His Thr Leu Pro Ser Thr Cys Leu 1040 1045 1050	3279
cag aag gtg gag gag cag cca gag gat gcg gac aac cag cgg aac Gln Lys Val Glu Glu Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn 1055 1060 1065	3324
gtc acc cgc atg ggt agt cag ccc ccg gac acc agc acc act gtg Val Thr Arg Met Gly Ser Gln Pro Pro Asp Thr Ser Thr Thr Val 1070 1075 1080	3369
cac att cct gtg acg ctg acc ggc ccc ccc ggg gag acc acg gta His Ile Pro Val Thr Leu Thr Gly Pro Pro Gly Glu Thr Thr Val 1085 1090 1095	3414

gtg ccc agt gga aac gtg gac ctg gaa agt caa gca gag ggg aag	3459
Val Pro Ser Gly Asn Val Asp Leu Glu Ser Gln Ala Glu Gly Lys	
1100 1105 1110	
aag gag gtg gaa acc agc gat gtg atg agg agc ggc cct cgg ccc	3504
Lys Glu Val Glu Thr Ser Asp Val Met Arg Ser Gly Pro Arg Pro	
1115 1120 1125	
att gtc ccg tac agt tcc atg ttc tgt tta agc cca acc aac ctg	3549
Ile Val Pro Tyr Ser Ser Met Phe Cys Leu Ser Pro Thr Asn Leu	
1130 1135 1140	
ctg cgc cgc tgc tgc cac tac att gtg acc atg cga tac ttc gag	3594
Leu Arg Arg Cys Cys His Tyr Ile Val Thr Met Arg Tyr Phe Glu	
1145 1150 1155	
atg gtc atc ctc gtg gtc atc gcc ctg agc agc atc gcc ctg gct	3639
Met Val Ile Leu Val Val Ile Ala Leu Ser Ser Ile Ala Leu Ala	
1160 1165 1170	
gcc gag gac ccc gtg aga aca gac tct ccc agg aat aat gct ctg	3684
Ala Glu Asp Pro Val Arg Thr Asp Ser Pro Arg Asn Asn Ala Leu	
1175 1180 1185	
aag tac atg gac tac atc ttc aca ggc gtc ttc acc ttc gag atg	3729
Lys Tyr Met Asp Tyr Ile Phe Thr Gly Val Phe Thr Phe Glu Met	
1190 1195 1200	
gtg ata aag atg atc gat ttg gga ctg ctg cta cac cct gga gcc	3774
Val Ile Lys Met Ile Asp Leu Gly Leu Leu Leu His Pro Gly Ala	
1205 1210 1215	
tat ttc cgg gat ctg tgg aac att ctg gac ttc att gtg gtc agt	3819
Tyr Phe Arg Asp Leu Trp Asn Ile Leu Asp Phe Ile Val Val Ser	
1220 1225 1230	
ggg gcc ctg gtg gca ttt gct ttc tca gga tcc aaa ggg aaa gac	3864
Gly Ala Leu Val Ala Phe Ala Phe Ser Gly Ser Lys Gly Lys Asp	
1235 1240 1245	
atc agc acc atc aaa tcc ctg aga gtc ctg cgt gtg ctg cgg cca	3909
Ile Ser Thr Ile Lys Ser Leu Arg Val Leu Arg Val Leu Arg Pro	
1250 1255 1260	
ctc aag acc atc aag cgg ctg ccc aag ctc aag gcc gtg ttt gac	3954
Leu Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val Phe Asp	
1265 1270 1275	
tgt gtg gtg aac tca ctg aaa aac gtc ctc aac atc ctg atc gtc	3999
Cys Val Val Asn Ser Leu Lys Asn Val Leu Asn Ile Leu Ile Val	
1280 1285 1290	
tac atg ctc ttc atg ttc atc ttt gcc gtc att gcc gtg cag ctc	4044
Tyr Met Leu Phe Met Phe Ile Phe Ala Val Ile Ala Val Gln Leu	
1295 1300 1305	
ttc aaa ggg aag ttc ttc tac tgc acg gac gaa tcc aag gag ctg	4089

Phe	Lys	Gly	Lys	Phe	Phe	Tyr	Cys	Thr	Asp	Glu	Ser	Lys	Glu	Leu	
1310						1315					1320				
gag	cgt	gac	tgc	agg	ggg	cag	tat	ttg	gat	tat	gag	aag	gag	gaa	4134
Glu	Arg	Asp	Cys	Arg	Gly	Gln	Tyr	Leu	Asp	Tyr	Glu	Lys	Glu	Glu	
1325						1330					1335				
gtg	gaa	gct	caa	ccg	agg	cag	tgg	aag	aaa	tat	gac	ttc	cac	tat	4179
Val	Glu	Ala	Gln	Pro	Arg	Gln	Trp	Lys	Lys	Tyr	Asp	Phe	His	Tyr	
1340						1345					1350				
gac	aac	gtg	ctc	tgg	gct	ctg	cta	acg	ctc	ttc	acg	gtg	tcc	aca	4224
Asp	Asn	Val	Leu	Trp	Ala	Leu	Leu	Thr	Leu	Phe	Thr	Val	Ser	Thr	
1355						1360					1365				
ggg	gaa	ggg	tgg	ccc	atg	gtg	ctg	aaa	cac	tct	gtg	gat	gcc	acc	4269
Gly	Glu	Gly	Trp	Pro	Met	Val	Leu	Lys	His	Ser	Val	Asp	Ala	Thr	
1370						1375					1380				
tac	gag	gag	cag	ggc	ccg	agc	ccc	ggg	tac	cgc	atg	gag	ctc	tcc	4314
Tyr	Glu	Glu	Gln	Gly	Pro	Ser	Pro	Gly	Tyr	Arg	Met	Glu	Leu	Ser	
1385						1390					1395				
atc	ttc	tac	gtg	gtc	tac	ttt	gtg	gtc	ttt	ccc	ttc	ttc	ttt	gtc	4359
Ile	Phe	Tyr	Val	Val	Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Phe	Val	
1400						1405					1410				
aac	atc	ttc	gtg	gcc	ttg	atc	atc	atc	acc	ttc	cag	gag	cag	ggg	4404
Asn	Ile	Phe	Val	Ala	Leu	Ile	Ile	Ile	Thr	Phe	Gln	Glu	Gln	Gly	
1415						1420					1425				
gac	aag	gtg	atg	tcc	gag	tgc	agc	ctg	gag	aag	aac	gag	agg	gct	4449
Asp	Lys	Val	Met	Ser	Glu	Cys	Ser	Leu	Glu	Lys	Asn	Glu	Arg	Ala	
1430						1435					1440				
tgc	atc	gac	ttt	gcc	atc	agc	gcc	aga	ccc	ctg	acg	cgg	tac	atg	4494
Cys	Ile	Asp	Phe	Ala	Ile	Ser	Ala	Arg	Pro	Leu	Thr	Arg	Tyr	Met	
1445						1450					1455				
ccc	cag	aac	aag	cag	tcg	ttc	cag	tat	aag	acg	tgg	acg	ttc	gtg	4539
Pro	Gln	Asn	Lys	Gln	Ser	Phe	Gln	Tyr	Lys	Thr	Trp	Thr	Phe	Val	
1460						1465					1470				
gtg	tcc	cca	cct	ttt	gag	tac	ttc	atc	atg	gct	atg	atc	gcc	ctc	4584
Val	Ser	Pro	Pro	Phe	Glu	Tyr	Phe	Ile	Met	Ala	Met	Ile	Ala	Leu	
1475						1480					1485				
aac	act	gtg	gtg	ctg	atg	atg	aag	ttc	tac	gat	gcg	ccg	tac	gag	4629
Asn	Thr	Val	Val	Leu	Met	Met	Lys	Phe	Tyr	Asp	Ala	Pro	Tyr	Glu	
1490						1495					1500				
tat	gag	cta	atg	ctg	aaa	tgc	ctg	aac	atc	gtg	ttc	acg	tcc	atg	4674
Tyr	Glu	Leu	Met	Leu	Lys	Cys	Leu	Asn	Ile	Val	Phe	Thr	Ser	Met	
1505						1510					1515				
ttc	tcc	atg	gag	tgt	gtg	ctg	aag	atc	atc	gcc	ttc	ggg	gtg	ctg	4719
Phe	Ser	Met	Glu	Cys	Val	Leu	Lys	Ile	Ile	Ala	Phe	Gly	Val	Leu	

1520		1525		1530	
aac tat ttc aga gat gcc tgg aat gtc ttt gac ttt gtc acg gtg	4764				
Asn Tyr Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val Thr Val					
1535		1540		1545	
ttg gga agt att act gat att ttg gta aca gag att gcg aac aac	4809				
Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Asn Asn					
1550		1555		1560	
ttc atc aac ctc agc ttc ctg cgc ctg ttc cgg gcc gcg cgg ctc	4854				
Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu					
1565		1570		1575	
atc aag ctg ctg cgc cag ggc tac acc atc cgc atc ctg ctt tgg	4899				
Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp					
1580		1585		1590	
acc ttc gtg cag tcc ttc aag gcg ctg ccc tac gtg tgt ctc ctc	4944				
Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu					
1595		1600		1605	
atc gcc atg ctc ttc ttc atc tac gcc atc att ggc atg cag gtt	4989				
Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val					
1610		1615		1620	
ttt ggg aac atc gcc ctg gac gat gac acc agc atc aac agg cac	5034				
Phe Gly Asn Ile Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His					
1625		1630		1635	
aat aac ttc cgg acg ttt ctg cag gcc ttg atg ttg ctg ttc agg	5079				
Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met Leu Leu Phe Arg					
1640		1645		1650	
agc gcc acg ggg gag gcc tgg cac gag ata atg ctg tcg tgc ctc	5124				
Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu					
1655		1660		1665	
agc agc cgg gcc tgc gac gag cac tcc aat gcc agc gag tgc ggc	5169				
Ser Ser Arg Ala Cys Asp Glu His Ser Asn Ala Ser Glu Cys Gly					
1670		1675		1680	
agc gac ttt gcc tac ttt tac ttc gtc tcc ttc atc ttc ctc tgc	5214				
Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys					
1685		1690		1695	
tcc ttt ctg atg ttg aac ctc ttt gtg gct gtg atc atg gac aat	5259				
Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn					
1700		1705		1710	
ttt gag tac ctt aca cgg gac tct tcc atc tta ggg cct cac cac	5304				
Phe Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His					
1715		1720		1725	
ctg gat gag ttc atc cgg gtc tgg gct gaa tac gac ccg gcc gcg	5349				
Leu Asp Glu Phe Ile Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala					
1730		1735		1740	

tgt ggg cgc atc agt tac agt gac atg ttt gag atg ctg aag cac	5394
Cys Gly Arg Ile Ser Tyr Ser Asp Met Phe Glu Met Leu Lys His	
1745 1750 1755	
atg tcc cca ccc ctg ggg ctg ggg aag aag tgc cct gct cga gtc	5439
Met Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro Ala Arg Val	
1760 1765 1770	
gcg tac aag cgc ctg gtc cgc atg aac atg ccc atc tcc agt gag	5484
Ala Tyr Lys Arg Leu Val Arg Met Asn Met Pro Ile Ser Ser Glu	
1775 1780 1785	
gac atg acg gtg cac ttc aca tcc acg ctg atg gct ctc att cgg	5529
Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg	
1790 1795 1800	
aca gcg ctg gac atc aag ctg gca cca gct ggg acc aag cag cac	5574
Thr Ala Leu Asp Ile Lys Leu Ala Pro Ala Gly Thr Lys Gln His	
1805 1810 1815	
cag tgc gac gca gag ctg agg aag gag att tcc tgt gtg tgg gcc	5619
Gln Cys Asp Ala Glu Leu Arg Lys Glu Ile Ser Cys Val Trp Ala	
1820 1825 1830	
aat ctg ccc cag aag acc ctg gac tta ctg gta cca ccc cat aag	5664
Asn Leu Pro Gln Lys Thr Leu Asp Leu Leu Val Pro Pro His Lys	
1835 1840 1845	
cct gac gag atg acg gtg ggc aaa gtc tat gca gct ctg atg atc	5709
Pro Asp Glu Met Thr Val Gly Lys Val Tyr Ala Ala Leu Met Ile	
1850 1855 1860	
ttc gac ttc tac aaa cag aac aaa acc agc aga gac cag act cag	5754
Phe Asp Phe Tyr Lys Gln Asn Lys Thr Ser Arg Asp Gln Thr Gln	
1865 1870 1875	
caa gcc ccc gga ggc ctg tcc cag ctg ggc ccc gtg tcc ctg ttc	5799
Gln Ala Pro Gly Gly Leu Ser Gln Leu Gly Pro Val Ser Leu Phe	
1880 1885 1890	
cac ccg ctg aag gcc acg ctg gag cag act cag ccg gcg ctg cgt	5844
His Pro Leu Lys Ala Thr Leu Glu Gln Thr Gln Pro Ala Leu Arg	
1895 1900 1905	
gga gcc cgg gct ttc ctg cgg cag aag agt tct gcc tcc ctg agc	5889
Gly Ala Arg Ala Phe Leu Arg Gln Lys Ser Ser Ala Ser Leu Ser	
1910 1915 1920	
aac ggc ggg gcc gta caa acc cag gag agc ggc atc aag gaa tcg	5934
Asn Gly Gly Ala Val Gln Thr Gln Glu Ser Gly Ile Lys Glu Ser	
1925 1930 1935	
gtt tct tgg ggc act cag agg acc cag gat gtg ctt tgc gag gcc	5979
Val Ser Trp Gly Thr Gln Arg Thr Gln Asp Val Leu Cys Glu Ala	
1940 1945 1950	

agg gca ccc ctg gag cgg ggc cac tca gct gag atc cca gtc ggg Arg Ala Pro Leu Glu Arg Gly His Ser Ala Glu Ile Pro Val Gly 1955 1960 1965	6024
cag cct ggg aca ctg gct gta gat gtc cag atg cag aac atg act Gln Pro Gly Thr Leu Ala Val Asp Val Gln Met Gln Asn Met Thr 1970 1975 1980	6069
ctg agt ggc cct gac gcc gag ccg cag cca ggg ctg gag agc cag Leu Ser Gly Pro Asp Ala Glu Pro Gln Pro Gly Leu Glu Ser Gln 1985 1990 1995	6114
ggc cga gcc gcc tcc atg ccc cgc ctg gcc gca gaa aca cag ccc Gly Arg Ala Ala Ser Met Pro Arg Leu Ala Ala Glu Thr Gln Pro 2000 2005 2010	6159
gcg cct gac gcc agc ccc atg aag cgc tcc atc tcc acg ctg gcc Ala Pro Asp Ala Ser Pro Met Lys Arg Ser Ile Ser Thr Leu Ala 2015 2020 2025	6204
ccg cgc ccc cac acg gcc cgg ctc ggc agc acc gcg ctg gac cgc Pro Arg Pro His Thr Ala Arg Leu Gly Ser Thr Ala Leu Asp Arg 2030 2035 2040	6249
cca gcc ccc agc cag gcc ccg cac cat cac cac cac cgc tgc cac Pro Ala Pro Ser Gln Ala Pro His His His His His Arg Cys His 2045 2050 2055	6294
cgc cgc agg gac agg aag cag cgg tcc ctg gag aag ggt ccc agc Arg Arg Arg Asp Arg Lys Gln Arg Ser Leu Glu Lys Gly Pro Ser 2060 2065 2070	6339
ctg tct gct gac aca gat ggg gcc ccc gac agc acg gtg ggg cca Leu Ser Ala Asp Thr Asp Gly Ala Pro Asp Ser Thr Val Gly Pro 2075 2080 2085	6384
gga ctg ccc acg ggg gag ggc ccc ccc ggc tgc agg cgg gag cgg Gly Leu Pro Thr Gly Glu Gly Pro Pro Gly Cys Arg Arg Glu Arg 2090 2095 2100	6429
gag cgc agg cag gag cgg ggc cgg tcc cag gag cgg agg cag ccc Glu Arg Arg Gln Glu Arg Gly Arg Ser Gln Glu Arg Arg Gln Pro 2105 2110 2115	6474
tcg tcc tcc tcc tcg gag aag cat cgc ttc tac tcc tgt gac cgc Ser Ser Ser Ser Ser Glu Lys His Arg Phe Tyr Ser Cys Asp Arg 2120 2125 2130	6519
ttc ggg ggc cgc gaa ccc cca cag ccc aag ccc tcc ctc agt agt Phe Gly Gly Arg Glu Pro Pro Gln Pro Lys Pro Ser Leu Ser Ser 2135 2140 2145	6564
cac ccc acg tcg ccg acg gcc ggg cag gag ccg gga ccc cac ccg His Pro Thr Ser Pro Thr Ala Gly Gln Glu Pro Gly Pro His Pro 2150 2155 2160	6609
cag ggg agt ggt tcg gtt cac ggg agc ccc ctg ctg tcc aca tct	6654

Gln Gly	Ser Gly Ser Val	His	Gly Ser Pro Leu	Leu	Ser Thr Ser	
2165		2170		2175		
ggt gct	agc acc ccg ggc	cgg	ggg cgg agg cag	ctc	ccc cag acc	6699
Gly Ala	Ser Thr Pro Gly	Arg	Gly Arg Arg Gln	Leu	Pro Gln Thr	
2180		2185		2190		
ccc ttg	acc ccc cgc ccc	agc	gtc acc tac aag	acg	gcc aac tcc	6744
Pro Leu	Thr Pro Arg Pro	Ser	Val Thr Tyr Lys	Thr	Ala Asn Ser	
2195		2200		2205		
tcg cct	gtc cac ttc gcc	ggg	gca ccg agc ggc	ctc	ccc gcc ttc	6789
Ser Pro	Val His Phe Ala	Gly	Ala Pro Ser Gly	Leu	Pro Ala Phe	
2210		2215		2220		
tcc ccc	ggc cgg ctc agc	cgg	ggc ctc tca gaa	cac	aac gcc ctg	6834
Ser Pro	Gly Arg Leu Ser	Arg	Gly Leu Ser Glu	His	Asn Ala Leu	
2225		2230		2235		
ctg cag	agg gac ccg ctc	agc	cgg ccc ctg gcg	ccc	ggc tcg cgc	6879
Leu Gln	Arg Asp Pro Leu	Ser	Arg Pro Leu Ala	Pro	Gly Ser Arg	
2240		2245		2250		
atc ggc	tcc gac ccc tac	ctg	ggg cag cgg ctg	gac	agc gag gcg	6924
Ile Gly	Ser Asp Pro Tyr	Leu	Gly Gln Arg Leu	Asp	Ser Glu Ala	
2255		2260		2265		
ccc gcc	cgt gcc ctg ccc	gag	gac gcg ccc gcc	ttt	gag gag acc	6969
Pro Ala	Arg Ala Leu Pro	Glu	Asp Ala Pro Ala	Phe	Glu Glu Thr	
2270		2275		2280		
gcg gcc	agc aac tcg ggc	cgc	tcc tcc cgg acc	tcg	tac gtg tcc	7014
Ala Ala	Ser Asn Ser Gly	Arg	Ser Ser Arg Thr	Ser	Tyr Val Ser	
2285		2290		2295		
tca ctg	acc tcg cag ccc	ccg	ccg ctg cgc cgc	gtg	ccc aac ggc	7059
Ser Leu	Thr Ser Gln Pro	Pro	Pro Leu Arg Arg	Val	Pro Asn Gly	
2300		2305		2310		
tac cac	tgc act ctg ggc	ctg	ggc ggg ggc ggc	cgg	gcg cgg cgc	7104
Tyr His	Cys Thr Leu Gly	Leu	Gly Gly Gly Gly	Arg	Ala Arg Arg	
2315		2320		2325		
ggc tgc	cac cac ccc gac	cgc	gac cgc cgg tgc	tag	ccgctgcgcg	7150
Gly Cys	His His Pro Asp	Arg	Asp Arg Arg Cys			
2330		2335				
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ccctggacgg	ggcctgggcg	gaggccccctg	ctccccctccc	cctcctccct	gacagcagac	7270
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Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
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Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
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Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
 100 105 110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
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Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
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Ala Gly Ile Lys Ile Leu Ala Leu Gly Phe Val Leu His Lys Gly Ser
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Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
165 170 175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
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Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
195 200 205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
210 215 220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
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Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
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Ser Thr Asp Pro Asp Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
260 265 270

Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Ala
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Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
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Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
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Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
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Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
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Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
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Glu Glu Gly Glu Gly Arg Leu Thr Gly Leu Cys Ala Pro Gly Ser Pro
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Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
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Lys Ala Gln Ser Phe Tyr Trp Thr Val Leu Cys Val Val Ala Leu Asn
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Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
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Glu Val Val Trp Ala Ala Val Lys Pro Gly Thr Ser Phe Gly Ile Ser
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Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe

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Val 660	Phe 660	Gln 660	Ile 660	Leu 660	Thr 660	Gly 665	Glu 665	Asp 665	Trp 665	Asn 665	Ala 665	Val 670	Met 670	Tyr 670	His 670		
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Tyr 690	Phe 690	Ile 690	Val 690	Leu 690	Thr 695	Leu 695	Phe 695	Gly 695	Asn 695	Tyr 700	Thr 700	Leu 700	Leu 700	Asn 700	Val 700		
Phe 705	Leu 705	Ala 705	Ile 705	Ala 710	Val 710	Asp 710	Asn 710	Leu 710	Ala 715	Asn 715	Ala 715	Gln 715	Glu 715	Leu 720	Thr 720		
Lys 725	Asp 725	Glu 725	Glu 725	Glu 725	Met 725	Glu 730	Glu 730	Ala 730	Ala 730	Asn 730	Gln 730	Lys 735	Leu 735	Ala 735	Leu 735		
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Ile 755	Ser 755	Ile 755	Ala 755	Ala 755	Arg 755	Gln 760	Gln 760	Asn 760	Ser 760	Ala 760	Lys 760	Ala 765	Arg 765	Ser 765	Val 765		
Trp 770	Glu 770	Gln 770	Arg 770	Ala 770	Ser 770	Gln 775	Leu 775	Arg 775	Leu 775	Gln 780	Asn 780	Leu 780	Arg 780	Ala 780	Ser 780		
Cys 785	Glu 785	Ala 785	Leu 785	Tyr 785	Ser 790	Glu 790	Met 790	Asp 790	Pro 790	Glu 795	Glu 795	Arg 795	Leu 795	Arg 795	Tyr 800		
Ala 805	Thr 805	Ala 805	Arg 805	His 805	Leu 805	Arg 805	Pro 805	Asp 810	Val 810	Lys 810	Thr 810	His 815	Leu 815	Asp 815	Arg 815		
Pro 820	Leu 820	Val 820	Val 820	Glu 820	Pro 820	Gly 820	Arg 825	Asp 825	Ala 825	Pro 825	Arg 825	Gly 830	Pro 830	Pro 830	Gly 830		
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Pro Arg Arg His His Arg His Arg Asp Lys Asp Lys Ala Pro Ala Thr
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Val Pro Ser Ala Gly Glu Gln Asp Arg Ala Glu Ala Leu Arg Ala Glu
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Gly Gly Glu Leu Gly Pro Arg Glu Glu Arg Gly Arg Pro Arg Arg Ser
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Arg Ser Lys Glu Ala Pro Gly Ala Pro Glu Val Arg Ser Asp Arg Gly
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His Gly Pro Asp Pro Gly Lys Glu Gly Pro Ala Ser Gly Thr Arg Gly
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Glu Arg Arg Ala Arg His Arg Thr Gly Pro Arg Ala Cys Pro Arg Glu
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Ala Glu Ser Ser Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys
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Gln Lys Val Glu Glu Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn
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1145						1150					1155			
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1235						1240					1245			
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Leu	Lys	Thr	Ile	Lys	Arg	Leu	Pro	Lys	Leu	Lys	Ala	Val	Phe	Asp
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Cys	Val	Val	Asn	Ser	Leu	Lys	Asn	Val	Leu	Asn	Ile	Leu	Ile	Val
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Gly	Glu	Gly	Trp	Pro	Met	Val	Leu	Lys	His	Ser	Val	Asp	Ala	Thr
1370						1375					1380			
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1385						1390					1395			
Ile	Phe	Tyr	Val	Val	Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Phe	Val
1400						1405					1410			
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Asp	Lys	Val	Met	Ser	Glu	Cys	Ser	Leu	Glu	Lys	Asn	Glu	Arg	Ala
1430						1435					1440			
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1460						1465					1470			
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1475						1480					1485			
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Asn Tyr Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val Thr Val				
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Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Asn Asn				
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Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu				
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Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp				
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Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu				
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Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val				
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Phe Gly Asn Ile Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His				
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Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met Leu Leu Phe Arg				
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Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn				
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1865						1870					1875			
Gln	Ala	Pro	Gly	Gly	Leu	Ser	Gln	Leu	Gly	Pro	Val	Ser	Leu	Phe
1880						1885					1890			
His	Pro	Leu	Lys	Ala	Thr	Leu	Glu	Gln	Thr	Gln	Pro	Ala	Leu	Arg
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Gly	Ala	Arg	Ala	Phe	Leu	Arg	Gln	Lys	Ser	Ser	Ala	Ser	Leu	Ser
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Asn	Gly	Gly	Ala	Val	Gln	Thr	Gln	Glu	Ser	Gly	Ile	Lys	Glu	Ser
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Gln	Pro	Gly	Thr	Leu	Ala	Val	Asp	Val	Gln	Met	Gln	Asn	Met	Thr
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2270						2275					2280			
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gcc ccg gcg cgg ctg tgc gag ggc gac act gag tgc cgg gag tac tgg Ala Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp 275 280 285	986
gcg ggc ccc aac ttc ggc atc acc aac ttc gac aac atc ctg ttc gcc Ala Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala 290 295 300	1034
atc ctg acg gtg ttc cag tgc atc acc atg gag ggc tgg acc gac atc Ile Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile 305 310 315	1082
ctc tac aac acc aac gac gcg gct ggc aac acc tgg aac tgg ctc tac Leu Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr 320 325 330 335	1130
ttc ctg ccc ctg att atc atc ggc tgc ttc ttc atg ctc aac ctg gtg Phe Leu Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val 340 345 350	1178
ctg ggc gtg ctc tca gga gag ttt gcc aag gag cgt gag cgg gtg gag Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu 355 360 365	1226
aac cgc cgg gcc ttt ctg aag ctc cgc cgg cag cag cag atc gag cgg Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg 370 375 380	1274
gag ctc aat ggg tac ctg gag tgg atc ttc aag gcc gag gag gtc atg Glu Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met 385 390 395	1322

ctg gcc gag gag gac aag aac gca gag gag aag tcc cct ctg gat gtg Leu Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val 400 405 410 415	1370
ttg aag aga gca gcc acc aag aag agc cga aac gac ctg atc cac gcg Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala 420 425 430	1418
gag gag gga gag gac cgc ttt gca gac ctc tgt gct gtg ggg tcc ccc Glu Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro 435 440 445	1466
ttc gcc cga gcc agc ctc aag agt ggg aag acg gag agc tcg tca tac Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr 450 455 460	1514
ttc cgc agg aag gag aag atg ttc cgg ttc ttc atc cgg cgc ctg gtg Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Leu Val 465 470 475	1562
aag gcg cag agc ttc tac tgg gtg gtg ctg tgt gtg gtg gcc ctg aac Lys Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn 480 485 490 495	1610
acg ctg tgc gtg gcc atg gtg cac tac cag cag ccc cag cgg ctc acc Thr Leu Cys Val Ala Met Val His Tyr Gln Gln Pro Gln Arg Leu Thr 500 505 510	1658
acg gcg ctg tac ttt gca gag ttt gtt ttc ctg ggt ctc ttc ctc aca Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr 515 520 525	1706
gag atg tcc ctg aag atg tat ggc ctg ggg ccc agg agc tac ttc cgg Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg 530 535 540	1754
tcc tcc ttc aac tgc ttc gat ttc ggg gtc att gtg ggg agc att ttc Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe 545 550 555	1802
gaa gtg gtc tgg gcg gcc atc aag cca gga acc tcc ttc ggc atc agt Glu Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser 560 565 570 575	1850
gtg ctg cgg gcg ctg cgg ctg ctg aga atc ttc aaa gtc acc aag tac Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr 580 585 590	1898
tgg agc tcc ctg cgg aac ctg gtg gtg tcc ctg ctc aac tcc atg aag Trp Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys 595 600 605	1946
tcc atc atc agc ctg ctc ttc ctg ctc ttc ctc ttc atc gtg gtc ttc Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe 610 615 620	1994
gct ctg ctg ggc atg cag ctc ttc ggg gga cag ttc aac ttc cag gat	2042

Ala	Leu	Leu	Gly	Met	Gln	Leu	Phe	Gly	Gly	Gln	Phe	Asn	Phe	Gln	Asp	
625						630					635					
gag	act	ccg	aca	acc	aac	ttt	gac	acc	ttc	cct	gcc	gcc	atc	ctc	act	2090
Glu	Thr	Pro	Thr	Thr	Asn	Phe	Asp	Thr	Phe	Pro	Ala	Ala	Ile	Leu	Thr	
640					645					650					655	
gtc	ttc	cag	atc	ctg	acc	ggg	gag	gac	tgg	aat	gcg	gtg	atg	tac	cat	2138
Val	Phe	Gln	Ile	Leu	Thr	Gly	Glu	Asp	Trp	Asn	Ala	Val	Met	Tyr	His	
				660					665					670		
ggg	atc	gaa	tca	caa	ggc	gga	gtc	agc	aag	ggc	atg	ttc	tcg	tct	gtg	2186
Gly	Ile	Glu	Ser	Gln	Gly	Gly	Val	Ser	Lys	Gly	Met	Phe	Ser	Ser	Val	
			675					680					685			
tac	ttc	att	gtc	ctg	acg	ctg	ttt	ggg	aac	tac	acc	ctg	ctg	aac	gtc	2234
Tyr	Phe	Ile	Val	Leu	Thr	Leu	Phe	Gly	Asn	Tyr	Thr	Leu	Leu	Asn	Val	
		690					695					700				
ttc	ctg	gcc	atc	gct	gtg	gac	aac	ctc	gcc	aat	gct	cag	gag	ctg	acc	2282
Phe	Leu	Ala	Ile	Ala	Val	Asp	Asn	Leu	Ala	Asn	Ala	Gln	Glu	Leu	Thr	
	705					710				715						
aag	gac	gaa	gag	gag	atg	gaa	gaa	gca	gcc	aat	cag	aag	ctt	gct	ctg	2330
Lys	Asp	Glu	Glu	Glu	Met	Glu	Glu	Ala	Ala	Asn	Gln	Lys	Leu	Ala	Leu	
720					725					730					735	
caa	aag	gcc	aaa	gaa	gtg	gct	gaa	gtc	agc	ccc	atg	tct	gcc	gcg	aac	2378
Gln	Lys	Ala	Lys	Glu	Val	Ala	Glu	Val	Ser	Pro	Met	Ser	Ala	Ala	Asn	
				740					745					750		
atc	tcc	att	gct	gcc	agg	cag	cag	aac	tcg	gcc	aag	gcg	cgc	tcg	gtg	2426
Ile	Ser	Ile	Ala	Ala	Arg	Gln	Gln	Asn	Ser	Ala	Lys	Ala	Arg	Ser	Val	
			755					760					765			
tgg	gag	cag	cgg	gcc	agc	cag	ctg	cgg	ctg	cag	aac	ctg	cgg	gcc	agc	2474
Trp	Glu	Gln	Arg	Ala	Ser	Gln	Leu	Arg	Leu	Gln	Asn	Leu	Arg	Ala	Ser	
		770					775					780				
tgt	gaa	gcg	ctg	tat	agc	gag	atg	gac	ccc	gag	gag	cgc	ctg	cgc	ttc	2522
Cys	Glu	Ala	Leu	Tyr	Ser	Glu	Met	Asp	Pro	Glu	Glu	Arg	Leu	Arg	Phe	
	785					790				795						
gcc	act	tcc	cgc	cac	ctg	cgg	ccc	gac	atg	aag	acg	cac	ctg	gac	cgg	2570
Ala	Thr	Ser	Arg	His	Leu	Arg	Pro	Asp	Met	Lys	Thr	His	Leu	Asp	Arg	
800					805					810					815	
ccg	ctt	gtg	gtg	gag	cca	ggc	cgg	gat	ggc	gcg	cgg	ggg	cct	gcg	ggg	2618
Pro	Leu	Val	Val	Glu	Pro	Gly	Arg	Asp	Gly	Ala	Arg	Gly	Pro	Ala	Gly	
				820					825					830		
ggc	aag	gcc	cgg	ccc	gag	ggc	gga	gag	gcc	ggc	gag	ggt	gcc	gac	ccg	2666
Gly	Lys	Ala	Arg	Pro	Glu	Gly	Gly	Glu	Ala	Gly	Glu	Gly	Ala	Asp	Pro	
			835					840					845			
ccg	cgc	agg	cac	cac	cgg	cac	cgc	gac	agg	gac	agg	gac	aag	gcc	gca	2714
Pro	Arg	Arg	His	His	Arg	His	Arg	Asp	Arg	Asp	Arg	Asp	Lys	Ala	Ala	

850	855	860	
gcc ccg gcg ggg gag cca gac agg gcg gac gcc ccg aag gcg gag ggc Ala Pro Ala Gly Glu Pro Asp Arg Ala Asp Ala Pro Lys Ala Glu Gly 865 870 875			2762
ggg gag ccg ggg gcc cgg gag gag cgg gcg cga ccg cgc cgc agc cgc Gly Glu Pro Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser Arg 880 885 890 895			2810
agc aag gag gcc gca ggc ccc cgc gag gcc agg agc gag cga ggc cgc Ser Lys Glu Ala Ala Gly Pro Arg Glu Ala Arg Ser Glu Arg Gly Arg 900 905 910			2858
ggg ctg ggc ccg gac ggc ggc cgg cgc cac cac cgg cgc ggc tcc ccg Gly Leu Gly Pro Asp Gly Gly Arg Arg His His Arg Arg Gly Ser Pro 915 920 925			2906
gag gag gcc gcg gag cgc gag ccc cgg cgc cac cgc gcg cac cgg cac Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His 930 935 940			2954
gcg ccg gag ccg agc agg gag ggc gcg ccc ggg agc aag ggc gag cgg Ala Pro Glu Pro Ser Arg Glu Gly Ala Pro Gly Ser Lys Gly Glu Arg 945 950 955			3002
cga gcg cgg cac cgc ggc ggc tcc cgg gcc ggg ccc cgg gag gcc gag Arg Ala Arg His Arg Gly Gly Ser Arg Ala Gly Pro Arg Glu Ala Glu 960 965 970 975			3050
agc ggc gag gag ccc tcc cgg cgg cac cga gcg cga cac aag gcg ccg Ser Gly Glu Glu Pro Ser Arg Arg His Arg Ala Arg His Lys Ala Pro 980 985 990			3098
ccc gca cac gag gag gcg gag aag gag gcc gag gcg gag gac agg gac Pro Ala His Glu Glu Ala Glu Lys Glu Ala Glu Ala Glu Asp Arg Asp 995 1000 1005			3146
aag gag ccc cga aac cac cag ccc agg gag tcg cac tgt gac ctg Lys Glu Pro Arg Asn His Gln Pro Arg Glu Ser His Cys Asp Leu 1010 1015 1020			3191
gag gcc agt gtg gtc att ggt gtg ggc cct gtg cat gcc ctg ccc Glu Ala Ser Val Val Ile Gly Val Gly Pro Val His Ala Leu Pro 1025 1030 1035			3236
agc act tgt cta gag aag gtg gaa gag cag cca gag gat gca gac Ser Thr Cys Leu Glu Lys Val Glu Glu Gln Pro Glu Asp Ala Asp 1040 1045 1050			3281
aat cag cgg aat gtg act cgc atg ggc agt cag ccc tca gat ctg Asn Gln Arg Asn Val Thr Arg Met Gly Ser Gln Pro Ser Asp Leu 1055 1060 1065			3326
agc acc gct gtg cgt atc cca gtg acg ctg acc ggg cct ccc ggg Ser Thr Ala Val Arg Ile Pro Val Thr Leu Thr Gly Fro Fro Gly 1070 1075 1080			3371

gag acc acg gtt gtt ccc agt ggt aac gtg gac ctg gaa agc caa	3416
Glu Thr Thr Val Val Pro Ser Gly Asn Val Asp Leu Glu Ser Gln	
1085 1090 1095	
gca gaa gga aag aag gag gtg gaa gct gat gac gtg atg agg agt	3461
Ala Glu Gly Lys Lys Glu Val Glu Ala Asp Asp Val Met Arg Ser	
1100 1105 1110	
ggc ccc cga ccc att gtc ccg tac agc tcc atg ttc tgc ttg agc	3506
Gly Pro Arg Pro Ile Val Pro Tyr Ser Ser Met Phe Cys Leu Ser	
1115 1120 1125	
ccc acc aac ctg ctc cgc cgc ttc tgc cac tac att gtg acc atg	3551
Pro Thr Asn Leu Leu Arg Arg Phe Cys His Tyr Ile Val Thr Met	
1130 1135 1140	
cag tac ttc gag atg gtc att ctc gtg gtc att gcc ctg agt agc	3596
Gln Tyr Phe Glu Met Val Ile Leu Val Val Ile Ala Leu Ser Ser	
1145 1150 1155	
att gcc ctg gct gcg gag gat cct gtg cag aca gac tcg ccc agg	3641
Ile Ala Leu Ala Ala Glu Asp Pro Val Gln Thr Asp Ser Pro Arg	
1160 1165 1170	
aac aac gtg ctg aag tac atg gac tac atc ttc aca ggt gtc ttc	3686
Asn Asn Val Leu Lys Tyr Met Asp Tyr Ile Phe Thr Gly Val Phe	
1175 1180 1185	
acc ttt gag atg gtg ata aag atg atc gat ttg gga ctg ctg ctg	3731
Thr Phe Glu Met Val Ile Lys Met Ile Asp Leu Gly Leu Leu Leu	
1190 1195 1200	
cac ccc ggt gcc tac ttc cgg gat ctg tgg aac att ctg gac ttc	3776
His Pro Gly Ala Tyr Phe Arg Asp Leu Trp Asn Ile Leu Asp Phe	
1205 1210 1215	
att gtg gtc agt ggg gcc ctg gtg gcg ttt gcc ttc tca ggc tcc	3821
Ile Val Val Ser Gly Ala Leu Val Ala Phe Ala Phe Ser Gly Ser	
1220 1225 1230	
aaa ggg aaa gac atc agc acc atc aag tcc ctg agg gtc ctg cgt	3866
Lys Gly Lys Asp Ile Ser Thr Ile Lys Ser Leu Arg Val Leu Arg	
1235 1240 1245	
gtg ctg agg cca ctc aag acc atc aag cgg ctg ccc aag ctc aaa	3911
Val Leu Arg Pro Leu Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys	
1250 1255 1260	
gct gtg ttt gac tgt gtg gtg aac tcc ctg aag aac gtc ctc aac	3956
Ala Val Phe Asp Cys Val Val Asn Ser Leu Lys Asn Val Leu Asn	
1265 1270 1275	
atc ctg atc gtc tac atg ctc ttc atg ttc ata ttt gct gtc atc	4001
Ile Leu Ile Val Tyr Met Leu Phe Met Phe Ile Phe Ala Val Ile	
1280 1285 1290	

gcg gta cag ctc ttc aag ggg aag ttt ttc tac tgc acc gac gag	4046
Ala Val Gln Leu Phe Lys Gly Lys Phe Phe Tyr Cys Thr Asp Glu	
1295 1300 1305	
tcc aag gag ctg gag cgg gac tgc agg ggc cag tat ttg gac tac	4091
Ser Lys Glu Leu Glu Arg Asp Cys Arg Gly Gln Tyr Leu Asp Tyr	
1310 1315 1320	
gag aag gag gag gtg gaa gct cag ccg cgg cag tgg aag aaa tac	4136
Glu Lys Glu Glu Val Glu Ala Gln Pro Arg Gln Trp Lys Lys Tyr	
1325 1330 1335	
gac ttc cac tat gac aac gtg ctg tgg gcc ctg cta acg ctg ttc	4181
Asp Phe His Tyr Asp Asn Val Leu Trp Ala Leu Leu Thr Leu Phe	
1340 1345 1350	
act gtg tcc acg ggc gaa ggg tgg ccc atg gtg ctg aaa cac tcg	4226
Thr Val Ser Thr Gly Glu Gly Trp Pro Met Val Leu Lys His Ser	
1355 1360 1365	
gtg gat gcc acc tac gag gag cag ggc ccc agc ccc ggg ttc cgc	4271
Val Asp Ala Thr Tyr Glu Glu Gln Gly Pro Ser Pro Gly Phe Arg	
1370 1375 1380	
atg gag ctg tcc atc ttc tat gtg gtc tac ttc gtg gtc ttc ccc	4316
Met Glu Leu Ser Ile Phe Tyr Val Val Tyr Phe Val Val Phe Pro	
1385 1390 1395	
ttc ttc ttt gtg aac atc ttt gtg gcc ttg atc atc atc acc ttc	4361
Phe Phe Phe Val Asn Ile Phe Val Ala Leu Ile Ile Ile Thr Phe	
1400 1405 1410	
cag gag cag ggg gac aaa gtc atg tct gag tgc agc ttg gag aag	4406
Gln Glu Gln Gly Asp Lys Val Met Ser Glu Cys Ser Leu Glu Lys	
1415 1420 1425	
aac gag agg gct tgt atc gac ttc gcc att agc gcc aaa ccc ctg	4451
Asn Glu Arg Ala Cys Ile Asp Phe Ala Ile Ser Ala Lys Pro Leu	
1430 1435 1440	
acg cgg tac atg ccc cag aac aag cag tcg ttc cag tac aag acg	4496
Thr Arg Tyr Met Pro Gln Asn Lys Gln Ser Phe Gln Tyr Lys Thr	
1445 1450 1455	
tgg acg ttc gtg gtc tca cca ccc ttt gag tat ttc atc atg gcc	4541
Trp Thr Phe Val Val Ser Pro Pro Phe Glu Tyr Phe Ile Met Ala	
1460 1465 1470	
atg ata gcc ctc aac aca gtg gtg ctg atg atg aag ttc tac gat	4586
Met Ile Ala Leu Asn Thr Val Val Leu Met Met Lys Phe Tyr Asp	
1475 1480 1485	
gcg ccc tac gag tac gaa ctg atg ttg aag tgt ctg aac atc gtg	4631
Ala Pro Tyr Glu Tyr Glu Leu Met Leu Lys Cys Leu Asn Ile Val	
1490 1495 1500	
ttc acg tcc atg ttc tcc atg gag tgt gtg ctc aag gtc atc gcc	4676

Phe Thr Ser Met Phe Ser Met Glu Cys Val Leu Lys Val Ile Ala	
1505 1510 1515	
ttt gga gtg ctg aac tat ttc aga gac gcc tgg aat gtc ttt gac	4721
Phe Gly Val Leu Asn Tyr Phe Arg Asp Ala Trp Asn Val Phe Asp	
1520 1525 1530	
ttt gtc act gtg ttg gga agt att act gat att tta gta aca gag	4766
Phe Val Thr Val Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu	
1535 1540 1545	
att gcg aac aac ttc atc aac ctc agc ttc ctc cgc ctc ttc cgt	4811
Ile Ala Asn Asn Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg	
1550 1555 1560	
gct gcc cga ctc atc aag ctg ctc cgc caa ggc tac acc atc cgc	4856
Ala Ala Arg Leu Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg	
1565 1570 1575	
att ctg ctc tgg acc ttc gtc cag tcc ttc aag gcc ctg ccc tat	4901
Ile Leu Leu Trp Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr	
1580 1585 1590	
gtg tgc ctg ctc atc gcc atg ctg ttc ttc atc tac gcc atc atc	4946
Val Cys Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile	
1595 1600 1605	
ggc atg cag gtg ttt gga aac att gct ctg gat gac gac acc agc	4991
Gly Met Gln Val Phe Gly Asn Ile Ala Leu Asp Asp Thr Ser	
1610 1615 1620	
atc aac cgt cac aat aac ttt cgg aca ttt ctt cag gcc ttg atg	5036
Ile Asn Arg His Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met	
1625 1630 1635	
ctg ctc ttc agg agt gcc acc ggg gag gcc tgg cat gag atc atg	5081
Leu Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met	
1640 1645 1650	
ctg tcc tgc ctc agc agt cgg gcc tgt gat gag ctc gcc aat gcc	5126
Leu Ser Cys Leu Ser Ser Arg Ala Cys Asp Glu Leu Ala Asn Ala	
1655 1660 1665	
acg gag tgt ggg agt gac ttc gcc tac ttc tac ttt gtc tcc ttc	5171
Thr Glu Cys Gly Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe	
1670 1675 1680	
atc ttc ctt tgc tcc ttt ctg atg ttg aac ctc ttt gtg gct gtg	5216
Ile Phe Leu Cys Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val	
1685 1690 1695	
atc atg gac aat ttt gag tac ctt acg cgg gac tct tcc atc cta	5261
Ile Met Asp Asn Phe Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu	
1700 1705 1710	
ggg cct cac cac ctg gac gaa ttc atc cgg gtc tgg gcc gag tac	5306
Gly Pro His His Leu Asp Glu Phe Ile Arg Val Trp Ala Glu Tyr	

1715				1720				1725							
gac	ccg	gct	gcg	tgt	ggg	cgc	atc	agt	tac	aat	gac	atg	ttt	gag	5351
Asp	Pro	Ala	Ala	Cys	Gly	Arg	Ile	Ser	Tyr	Asn	Asp	Met	Phe	Glu	
		1730					1735							1740	
atg	ctg	aaa	cac	atg	tcc	ccg	ccc	ctg	ggg	ctg	ggg	aag	aaa	tgc	5396
Met	Leu	Lys	His	Met	Ser	Pro	Pro	Leu	Gly	Leu	Gly	Lys	Lys	Cys	
		1745					1750							1755	
cct	gct	cgt	gtt	gcg	tac	aag	cgc	ctg	gtt	cgt	atg	aac	atg	ccc	5441
Pro	Ala	Arg	Val	Ala	Tyr	Lys	Arg	Leu	Val	Arg	Met	Asn	Met	Pro	
		1760					1765							1770	
atc	tcc	aat	gac	gac	atg	acc	gtc	cac	ttc	aca	tcc	acg	ctg	atg	5486
Ile	Ser	Asn	Asp	Asp	Met	Thr	Val	His	Phe	Thr	Ser	Thr	Leu	Met	
		1775					1780							1785	
gcc	ctc	atc	cgg	act	gca	ttg	gag	atc	aag	ctg	gct	cca	gct	ggc	5531
Ala	Leu	Ile	Arg	Thr	Ala	Leu	Glu	Ile	Lys	Leu	Ala	Pro	Ala	Gly	
		1790					1795							1800	
acg	aag	cag	cat	cag	tgt	gac	gca	gag	ctg	agg	aag	gag	atc	tcc	5576
Thr	Lys	Gln	His	Gln	Cys	Asp	Ala	Glu	Leu	Arg	Lys	Glu	Ile	Ser	
		1805					1810							1815	
tcc	gtg	tgg	gcc	aat	ctg	ccc	cag	aag	acc	ctg	gac	tta	ctg	gtg	5621
Ser	Val	Trp	Ala	Asn	Leu	Pro	Gln	Lys	Thr	Leu	Asp	Leu	Leu	Val	
		1820					1825							1830	
cca	ccc	cat	aaa	ccc	gac	gag	atg	acg	gtg	ggg	aag	gtg	tac	gca	5666
Pro	Pro	His	Lys	Pro	Asp	Glu	Met	Thr	Val	Gly	Lys	Val	Tyr	Ala	
		1835					1840							1845	
gct	ctg	atg	ata	ttc	gac	ttc	tac	aaa	cag	aac	aaa	acc	acc	aga	5711
Ala	Leu	Met	Ile	Phe	Asp	Phe	Tyr	Lys	Gln	Asn	Lys	Thr	Thr	Arg	
		1850					1855							1860	
gac	cag	att	cac	caa	gct	cct	gga	ggc	ctg	gcc	cag	atg	ggc	ccc	5756
Asp	Gln	Ile	His	Gln	Ala	Pro	Gly	Gly	Leu	Ala	Gln	Met	Gly	Pro	
		1865					1870							1875	
gtg	tcc	ctg	ttc	cac	ccc	ctg	aag	gcc	acg	ctg	gag	cag	act	cag	5801
Val	Ser	Leu	Phe	His	Pro	Leu	Lys	Ala	Thr	Leu	Glu	Gln	Thr	Gln	
		1880					1885							1890	
ccg	gct	gtg	ctc	cga	gga	gcc	cgc	gtt	ttc	ctt	cgg	cag	aag	agc	5846
Pro	Ala	Val	Leu	Arg	Gly	Ala	Arg	Val	Phe	Leu	Arg	Gln	Lys	Ser	
		1895					1900							1905	
tcg	gcc	tcc	ctc	agc	aac	ggt	ggg	gca	gta	caa	acc	caa	gag	ggc	5891
Ser	Ala	Ser	Leu	Ser	Asn	Gly	Gly	Ala	Val	Gln	Thr	Gln	Glu	Gly	
		1910					1915							1920	
ggc	atc	aag	gag	tct	gtc	tcc	tgg	ggc	act	cag	agg	acc	cag	gag	5936
Gly	Ile	Lys	Glu	Ser	Val	Ser	Trp	Gly	Thr	Gln	Arg	Thr	Gln	Glu	
		1925					1930							1935	

gtc ccc tgc gag gtg agg aca ccc ctg gag cgt ggc cac tcc aca Val Pro Cys Glu Val Arg Thr Pro Leu Glu Arg Gly His Ser Thr	5981
1940 1945 1950	
gag atc ccg gtg cag aca gga aaa ccg gct gtg gac gtc cag atg Glu Ile Pro Val Gln Thr Gly Lys Pro Ala Val Asp Val Gln Met	6026
1955 1960 1965	
cag agc atg gtc ctg aga ggc cct gac ggg gag ccc caa cct ggg Gln Ser Met Val Leu Arg Gly Pro Asp Gly Glu Pro Gln Pro Gly	6071
1970 1975 1980	
ctg gag agc cag ggc cga gca gct tcc atg ccc cgc ctg gca gca Leu Glu Ser Gln Gly Arg Ala Ala Ser Met Pro Arg Leu Ala Ala	6116
1985 1990 1995	
gag act cag cca ccc cca gat gcc agc ccc atg aag cgc tcc atc Glu Thr Gln Pro Pro Pro Asp Ala Ser Pro Met Lys Arg Ser Ile	6161
2000 2005 2010	
tcc aca ctg gca ccc cag agg ccc cac gtg gct cat ctg tgc acc Ser Thr Leu Ala Pro Gln Arg Pro His Val Ala His Leu Cys Thr	6206
2015 2020 2025	
gcg gcc ctg gac cgc gct cca gcc agc cag gcc gcc ccc ccc cac Ala Ala Leu Asp Arg Ala Pro Ala Ser Gln Ala Ala Pro Pro His	6251
2030 2035 2040	
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2045 2050 2055	
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2060 2065 2070	
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2075 2080 2085	
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2090 2095 2100	
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2105 2110 2115	
tac tcc tgt gac cgc ttt ggg ggc cgt gag ccc ccg cag ccc aag Tyr Ser Cys Asp Arg Phe Gly Gly Arg Glu Pro Pro Gln Pro Lys	6521
2120 2125 2130	
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2135 2140 2145	

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Pro Gly Pro	Pro Arg Gln Gly Ser	Gly Ser Val Asn Gly	Ser Pro	
2150	2155	2160		
ctg ctg tcg	aca tct ggt gct agc	acc cct ggc cgc ggc	ggg cgg	6656
Leu Leu Ser	Thr Ser Gly Ala Ser	Thr Pro Gly Arg Gly	Gly Arg	
2165	2170	2175		
agg cag ctc	ccc cag acc ccg ctg	acc ccc cgt ccc agc	atc acc	6701
Arg Gln Leu	Pro Gln Thr Pro Leu	Thr Pro Arg Pro Ser	Ile Thr	
2180	2185	2190		
tat aag acg	gcc aac tcc tca cct	gtc cac ttt gcc ggg	gct cag	6746
Tyr Lys Thr	Ala Asn Ser Ser Pro	Val His Phe Ala Gly	Ala Gln	
2195	2200	2205		
acc agc ctc	cct gcc ttt tcc ccc	ggc cgg ctt agc cgt	ggc ctt	6791
Thr Ser Leu	Pro Ala Phe Ser Pro	Gly Arg Leu Ser Arg	Gly Leu	
2210	2215	2220		
tcg gaa cac	aac gcc ctg ctc cag	aga gac ccc ctc agc	cag ccg	6836
Ser Glu His	Asn Ala Leu Leu Gln	Arg Asp Pro Leu Ser	Gln Pro	
2225	2230	2235		
ctg gcc ccc	agc tct cgg att ggc	tcc gac cct tac ctg	ggg cag	6881
Leu Ala Pro	Ser Ser Arg Ile Gly	Ser Asp Pro Tyr Leu	Gly Gln	
2240	2245	2250		
cgt ctg gac	agt gag gct gcg gcc	cgc acc cag ctt gag	gac acg	6926
Arg Leu Asp	Ser Glu Ala Ala Ala	Arg Thr Gln Leu Glu	Asp Thr	
2255	2260	2265		
ctc acc ttc	gag gag gcc gtg gcc	acc aac tcg ggc cgc	tcc tcc	6971
Leu Thr Phe	Glu Glu Ala Val Ala	Thr Asn Ser Gly Arg	Ser Ser	
2270	2275	2280		
cgg act tcc	tac gtg tcc tcc ctg	acc tcg cag tcc cac	ccc ctc	7016
Arg Thr Ser	Tyr Val Ser Ser Leu	Thr Ser Gln Ser His	Pro Leu	
2285	2290	2295		
cgc cgg gtg	ccc aac ggc tac cac	tgc act ctg ggg ctc	agc tcg	7061
Arg Arg Val	Pro Asn Gly Tyr His	Cys Thr Leu Gly Leu	Ser Ser	
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Gly Gly Gly	Gly Arg Gly Arg His	Ser Tyr His His Pro	Asp Gln	
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Gly Pro Gly Gly Leu Gln Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
35 40 45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
50 55 60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65 70 75 80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
85 90 95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
100 105 110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
115 120 125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
130 135 140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Leu His Lys Gly Ser
145 150 155 160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
165 170 175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
180 185 190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
195 200 205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
210 215 220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225 230 235 240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
245 250 255

Ser Thr Asp Ala Asp Pro Val Gly Asp Phe Pro Cys Gly Arg Glu Ala
260 265 270

Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Ala
275 280 285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
290 295 300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305 310 315 320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
325 330 335

Leu Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
340 345 350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
355 360 365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
370 375 380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385 390 395 400

Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
405 410 415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
420 425 430

Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
435 440 445

Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
450 455 460

Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Leu Val Lys
465 470 475 480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
485 490 495

Leu Cys Val Ala Met Val His Tyr Gln Gln Pro Gln Arg Leu Thr Thr
500 505 510

Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
515 520 525

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
530 535 540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545 550 555 560

Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
565 570 575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
580 585 590

Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
595 600 605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
610 615 620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625 630 635 640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
645 650 655

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
660 665 670

Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Val Tyr
675 680 685

Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
690 695 700

Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705 710 715 720

Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
725 730 735

Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
740 745 750

Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
755 760 765

Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
770 775 780

Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Phe Ala
785 790 795 800

Thr Ser Arg His Leu Arg Pro Asp Met Lys Thr His Leu Asp Arg Pro
805 810 815

Leu Val Val Glu Pro Gly Arg Asp Gly Ala Arg Gly Pro Ala Gly Gly
820 825 830

Lys Ala Arg Pro Glu Gly Gly Glu Ala Gly Glu Gly Ala Asp Pro Pro
835 840 845

Arg Arg His His Arg His Arg Asp Arg Asp Arg Asp Lys Ala Ala Ala
850 855 860

Pro Ala Gly Glu Pro Asp Arg Ala Asp Ala Pro Lys Ala Glu Gly Gly
865 870 875 880

Glu Pro Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser Arg Ser
885 890 895

Lys Glu Ala Ala Gly Pro Arg Glu Ala Arg Ser Glu Arg Gly Arg Gly

900	905	910
Leu Gly Pro Asp Gly Gly Arg Arg His His Arg Arg Gly Ser Pro Glu 915 920 925		
Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His Ala 930 935 940		
Pro Glu Pro Ser Arg Glu Gly Ala Pro Gly Ser Lys Gly Glu Arg Arg 945 950 955 960		
Ala Arg His Arg Gly Gly Ser Arg Ala Gly Pro Arg Glu Ala Glu Ser 965 970 975		
Gly Glu Glu Pro Ser Arg Arg His Arg Ala Arg His Lys Ala Pro Pro 980 985 990		
Ala His Glu Glu Ala Glu Lys Glu Ala Glu Ala Glu Asp Arg Asp Lys 995 1000 1005		
Glu Pro Arg Asn His Gln Pro Arg Glu Ser His Cys Asp Leu Glu 1010 1015 1020		
Ala Ser Val Val Ile Gly Val Gly Pro Val His Ala Leu Pro Ser 1025 1030 1035		
Thr Cys Leu Glu Lys Val Glu Glu Gln Pro Glu Asp Ala Asp Asn 1040 1045 1050		
Gln Arg Asn Val Thr Arg Met Gly Ser Gln Pro Ser Asp Leu Ser 1055 1060 1065		
Thr Ala Val Arg Ile Pro Val Thr Leu Thr Gly Pro Pro Gly Glu 1070 1075 1080		
Thr Thr Val Val Pro Ser Gly Asn Val Asp Leu Glu Ser Gln Ala 1085 1090 1095		
Glu Gly Lys Lys Glu Val Glu Ala Asp Asp Val Met Arg Ser Gly 1100 1105 1110		
Pro Arg Pro Ile Val Pro Tyr Ser Ser Met Phe Cys Leu Ser Pro 1115 1120 1125		

Thr	Asn	Leu	Leu	Arg	Arg	Phe	Cys	His	Tyr	Ile	Val	Thr	Met	Gln
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Tyr	Phe	Glu	Met	Val	Ile	Leu	Val	Val	Ile	Ala	Leu	Ser	Ser	Ile
1145						1150					1155			
Ala	Leu	Ala	Ala	Glu	Asp	Pro	Val	Gln	Thr	Asp	Ser	Pro	Arg	Asn
1160						1165					1170			
Asn	Val	Leu	Lys	Tyr	Met	Asp	Tyr	Ile	Phe	Thr	Gly	Val	Phe	Thr
1175						1180					1185			
Phe	Glu	Met	Val	Ile	Lys	Met	Ile	Asp	Leu	Gly	Leu	Leu	Leu	His
1190						1195					1200			
Pro	Gly	Ala	Tyr	Phe	Arg	Asp	Leu	Trp	Asn	Ile	Leu	Asp	Phe	Ile
1205						1210					1215			
Val	Val	Ser	Gly	Ala	Leu	Val	Ala	Phe	Ala	Phe	Ser	Gly	Ser	Lys
1220						1225					1230			
Gly	Lys	Asp	Ile	Ser	Thr	Ile	Lys	Ser	Leu	Arg	Val	Leu	Arg	Val
1235						1240					1245			
Leu	Arg	Pro	Leu	Lys	Thr	Ile	Lys	Arg	Leu	Pro	Lys	Leu	Lys	Ala
1250						1255					1260			
Val	Phe	Asp	Cys	Val	Val	Asn	Ser	Leu	Lys	Asn	Val	Leu	Asn	Ile
1265						1270					1275			
Leu	Ile	Val	Tyr	Met	Leu	Phe	Met	Phe	Ile	Phe	Ala	Val	Ile	Ala
1280						1285					1290			
Val	Gln	Leu	Phe	Lys	Gly	Lys	Phe	Phe	Tyr	Cys	Thr	Asp	Glu	Ser
1295						1300					1305			
Lys	Glu	Leu	Glu	Arg	Asp	Cys	Arg	Gly	Gln	Tyr	Leu	Asp	Tyr	Glu
1310						1315					1320			
Lys	Glu	Glu	Val	Glu	Ala	Gln	Pro	Arg	Gln	Trp	Lys	Lys	Tyr	Asp
1325						1330					1335			

Phe	His	Tyr	Asp	Asn	Val	Leu	Trp	Ala	Leu	Leu	Thr	Leu	Phe	Thr
1340						1345					1350			
Val	Ser	Thr	Gly	Glu	Gly	Trp	Pro	Met	Val	Leu	Lys	His	Ser	Val
1355						1360					1365			
Asp	Ala	Thr	Tyr	Glu	Glu	Gln	Gly	Pro	Ser	Pro	Gly	Phe	Arg	Met
1370						1375					1380			
Glu	Leu	Ser	Ile	Phe	Tyr	Val	Val	Tyr	Phe	Val	Val	Phe	Pro	Phe
1385						1390					1395			
Phe	Phe	Val	Asn	Ile	Phe	Val	Ala	Leu	Ile	Ile	Ile	Thr	Phe	Gln
1400						1405					1410			
Glu	Gln	Gly	Asp	Lys	Val	Met	Ser	Glu	Cys	Ser	Leu	Glu	Lys	Asn
1415						1420					1425			
Glu	Arg	Ala	Cys	Ile	Asp	Phe	Ala	Ile	Ser	Ala	Lys	Pro	Leu	Thr
1430						1435					1440			
Arg	Tyr	Met	Pro	Gln	Asn	Lys	Gln	Ser	Phe	Gln	Tyr	Lys	Thr	Trp
1445						1450					1455			
Thr	Phe	Val	Val	Ser	Pro	Pro	Phe	Glu	Tyr	Phe	Ile	Met	Ala	Met
1460						1465					1470			
Ile	Ala	Leu	Asn	Thr	Val	Val	Leu	Met	Met	Lys	Phe	Tyr	Asp	Ala
1475						1480					1485			
Pro	Tyr	Glu	Tyr	Glu	Leu	Met	Leu	Lys	Cys	Leu	Asn	Ile	Val	Phe
1490						1495					1500			
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1505						1510					1515			
Gly	Val	Leu	Asn	Tyr	Phe	Arg	Asp	Ala	Trp	Asn	Val	Phe	Asp	Phe
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Val	Thr	Val	Leu	Gly	Ser	Ile	Thr	Asp	Ile	Leu	Val	Thr	Glu	Ile
1535						1540					1545			

Ala	Asn	Asn	Phe	Ile	Asn	Leu	Ser	Phe	Leu	Arg	Leu	Phe	Arg	Ala
1550						1555					1560			
Ala	Arg	Leu	Ile	Lys	Leu	Leu	Arg	Gln	Gly	Tyr	Thr	Ile	Arg	Ile
1565						1570					1575			
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1580						1585					1590			
Cys	Leu	Leu	Ile	Ala	Met	Leu	Phe	Phe	Ile	Tyr	Ala	Ile	Ile	Gly
1595						1600					1605			
Met	Gln	Val	Phe	Gly	Asn	Ile	Ala	Leu	Asp	Asp	Asp	Thr	Ser	Ile
1610						1615					1620			
Asn	Arg	His	Asn	Asn	Phe	Arg	Thr	Phe	Leu	Gln	Ala	Leu	Met	Leu
1625						1630					1635			
Leu	Phe	Arg	Ser	Ala	Thr	Gly	Glu	Ala	Trp	His	Glu	Ile	Met	Leu
1640						1645					1650			
Ser	Cys	Leu	Ser	Ser	Arg	Ala	Cys	Asp	Glu	Leu	Ala	Asn	Ala	Thr
1655						1660					1665			
Glu	Cys	Gly	Ser	Asp	Phe	Ala	Tyr	Phe	Tyr	Phe	Val	Ser	Phe	Ile
1670						1675					1680			
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1685						1690					1695			
Met	Asp	Asn	Phe	Glu	Tyr	Leu	Thr	Arg	Asp	Ser	Ser	Ile	Leu	Gly
1700						1705					1710			
Pro	His	His	Leu	Asp	Glu	Phe	Ile	Arg	Val	Trp	Ala	Glu	Tyr	Asp
1715						1720					1725			
Pro	Ala	Ala	Cys	Gly	Arg	Ile	Ser	Tyr	Asn	Asp	Met	Phe	Glu	Met
1730						1735					1740			
Leu	Lys	His	Met	Ser	Pro	Pro	Leu	Gly	Leu	Gly	Lys	Lys	Cys	Pro
1745						1750					1755			
Ala	Arg	Val	Ala	Tyr	Lys	Arg	Leu	Val	Arg	Met	Asn	Met	Pro	Ile

1760		1765		1770
Ser Asn Asp Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala				
1775		1780		1785
Leu Ile Arg Thr Ala Leu Glu Ile Lys Leu Ala Pro Ala Gly Thr				
1790		1795		1800
Lys Gln His Gln Cys Asp Ala Glu Leu Arg Lys Glu Ile Ser Ser				
1805		1810		1815
Val Trp Ala Asn Leu Pro Gln Lys Thr Leu Asp Leu Leu Val Pro				
1820		1825		1830
Pro His Lys Pro Asp Glu Met Thr Val Gly Lys Val Tyr Ala Ala				
1835		1840		1845
Leu Met Ile Phe Asp Phe Tyr Lys Gln Asn Lys Thr Thr Arg Asp				
1850		1855		1860
Gln Ile His Gln Ala Pro Gly Gly Leu Ala Gln Met Gly Pro Val				
1865		1870		1875
Ser Leu Phe His Pro Leu Lys Ala Thr Leu Glu Gln Thr Gln Pro				
1880		1885		1890
Ala Val Leu Arg Gly Ala Arg Val Phe Leu Arg Gln Lys Ser Ser				
1895		1900		1905
Ala Ser Leu Ser Asn Gly Gly Ala Val Gln Thr Gln Glu Gly Gly				
1910		1915		1920
Ile Lys Glu Ser Val Ser Trp Gly Thr Gln Arg Thr Gln Glu Val				
1925		1930		1935
Pro Cys Glu Val Arg Thr Pro Leu Glu Arg Gly His Ser Thr Glu				
1940		1945		1950
Ile Pro Val Gln Thr Gly Lys Pro Ala Val Asp Val Gln Met Gln				
1955		1960		1965
Ser Met Val Leu Arg Gly Pro Asp Gly Glu Pro Gln Pro Gly Leu				
1970		1975		1980

Glu	Ser	Gln	Gly	Arg	Ala	Ala	Ser	Met	Pro	Arg	Leu	Ala	Ala	Glu
1985						1990					1995			
Thr	Gln	Pro	Pro	Pro	Asp	Ala	Ser	Pro	Met	Lys	Arg	Ser	Ile	Ser
2000						2005					2010			
Thr	Leu	Ala	Pro	Gln	Arg	Pro	His	Val	Ala	His	Leu	Cys	Thr	Ala
2015						2020					2025			
Ala	Leu	Asp	Arg	Ala	Pro	Ala	Ser	Gln	Ala	Ala	Pro	Pro	His	His
2030						2035					2040			
His	Arg	Cys	His	Arg	Arg	Arg	Asp	Arg	Lys	Gln	Lys	Ser	Leu	Glu
2045						2050					2055			
Lys	Gly	Pro	Gly	Leu	Ser	Ala	Asp	Thr	Asp	Gly	Ala	Pro	Tyr	Ser
2060						2065					2070			
Thr	Ala	Gly	Pro	Gly	Pro	Pro	Pro	Pro	Pro	Gly	Asp	Gly	Ala	Ala
2075						2080					2085			
Gly	Cys	Arg	Arg	Glu	Arg	Arg	Gln	Glu	Arg	Gly	Arg	Ser	Gln	Glu
2090						2095					2100			
Arg	Arg	Gln	Pro	Ser	Ser	Ser	Ser	Ser	Glu	Lys	Gln	Arg	Phe	Tyr
2105						2110					2115			
Ser	Cys	Asp	Arg	Phe	Gly	Gly	Arg	Glu	Pro	Pro	Gln	Pro	Lys	Pro
2120						2125					2130			
Ser	Leu	Ser	Ser	His	Pro	Thr	Ser	Pro	Thr	Ala	Gly	Gln	Glu	Pro
2135						2140					2145			
Gly	Pro	Pro	Arg	Gln	Gly	Ser	Gly	Ser	Val	Asn	Gly	Ser	Pro	Leu
2150						2155					2160			
Leu	Ser	Thr	Ser	Gly	Ala	Ser	Thr	Pro	Gly	Arg	Gly	Gly	Arg	Arg
2165						2170					2175			
Gln	Leu	Pro	Gln	Thr	Pro	Leu	Thr	Pro	Arg	Pro	Ser	Ile	Thr	Tyr
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Lys Thr Ala Asn Ser Ser Pro Val His Phe Ala Gly Ala Gln Thr
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Ser Leu Pro Ala Phe Ser Pro Gly Arg Leu Ser Arg Gly Leu Ser
2210 2215 2220

Glu His Asn Ala Leu Leu Gln Arg Asp Pro Leu Ser Gln Pro Leu
2225 2230 2235

Ala Pro Ser Ser Arg Ile Gly Ser Asp Pro Tyr Leu Gly Gln Arg
2240 2245 2250

Leu Asp Ser Glu Ala Ala Ala Arg Thr Gln Leu Glu Asp Thr Leu
2255 2260 2265

Thr Phe Glu Glu Ala Val Ala Thr Asn Ser Gly Arg Ser Ser Arg
2270 2275 2280

Thr Ser Tyr Val Ser Ser Leu Thr Ser Gln Ser His Pro Leu Arg
2285 2290 2295

Arg Val Pro Asn Gly Tyr His Cys Thr Leu Gly Leu Ser Ser Gly
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Gly Gly Gly Arg Gly Arg His Ser Tyr His His Pro Asp Gln Asp
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His Trp Cys
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norvegicus

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Lys

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<213> Rattus norvegicus

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